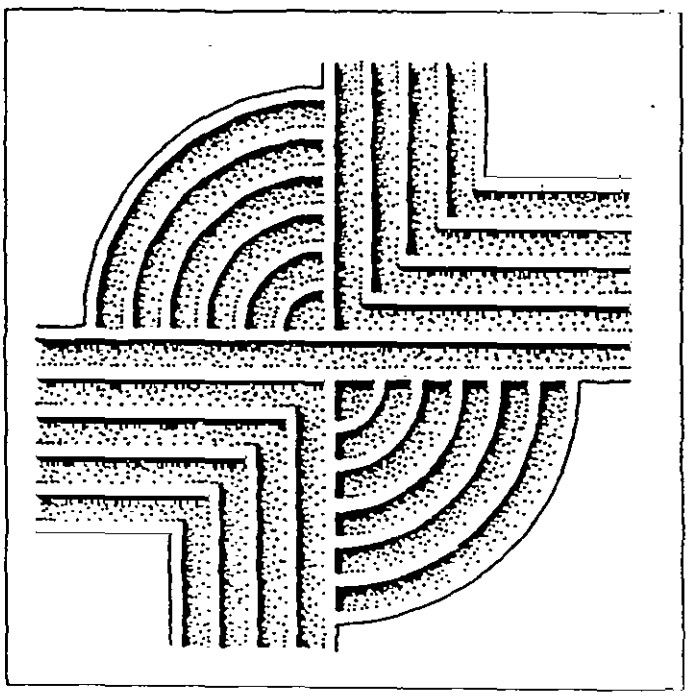
ARCHAEOLOGICAL AND HISTORICAL INVESTIGATION OF THE OGEECHEE ROAD BRIDGE OVER THE SPRINGFIELD CANALS, CITY OF SAVANNAH, CHATHAM COUNTY, GEORGIA



CHICORA RESEARCH CONTRIBUTION 293

ARCHAEOLOGICAL AND HISTORICAL INVESTIGATION OF THE OGEECHEE ROAD BRIDGE OVER THE SPRINGFIELD CANAL, CITY OF SAVANNAH, CHATHAM COUNTY, GEORGIA

Prepared By:
Michael Trinkley, Ph.D.

Prepared For:
Mr. Ray Pittman, PE
Thomas and Hutton Engineering Company
PO Box 14609
Savannah, GA 31416

Chicora Foundation Research Series 293

Chicora Foundation, Inc.
PO Box 8664 ▪ 861 Arbutus Drive
Columbia, South Carolina 29202-8664
803/787-6910
Email: chicora1@aol.com

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ABSTRACT

This study reports on both documentary research and field survey associated with the replacement of the Ogeechee Road bridge over the Springfield Canal on the southwestern edge of the City of Savannah. This project is part of the Springfield Canal Drainage Improvements Project currently being planned by the City of Savannah. The project would replace the existing bridge, a small brick culvert, remove a nearby modern house, and create a grassed maintenance roadway adjacent to the canal. The work was conducted to assist Thomas and Hutton Engineering Company and the City of Savannah comply with Section 106 of the National Historic Preservation Act and the regulations codified in 36CFR800.

The research included a historical overview of the Springfield Canal. The field investigations included limited shovel testing in the area where an existing house foundation is to be removed. The work was limited to the immediate bridge area.

The historical research reveals that Ogeechee Road was paved with shell until 1909 when the shell was replaced with gravel. Through about 1920 the bridge was wood and the roadway remained graveled. The area, at the edge of Savannah, received little attention and there is, as a result, little documentation. The period from the 1920s through the late 1950s is one of even more limited municipal reports. We have been unable to determine when the brick culvert was constructed, but it seems to have been sometime between about 1920 and 1940.

The culvert is a brick arch, about 13-inches thick, joined by 13-inch thick headwalls, laid in American bond. The culvert fill is soil on the sides and clay under the 7-inch thick concrete roadway with a central expansion joint. More recently 1½-inches of asphalt have been laid over the concrete deck. The south headwall has detached from the arch, likely a result of heavy loads causing foundation collapse. The City has temporarily shored the south side up using metal panels.

While this is a type of structure not frequently encountered, it is not recommended eligible for inclusion on the National Register of Historic Places, based on the Criteria for Historical Significance of Bridges, developed by the Historic Preservation Section, Georgia Department of Natural Resources.

The archaeological investigations reveal that the structures northwest of the bridge, now demolished, left behind an assortment of twentieth century archaeological remains, including nails, window glass, coal, and brick rubble. While the quantities of remains are dense, the variety is very limited. Moreover, all of the identified materials appear to have been deposited within the past 40 to 50 years. Although these remains are very recent, they were assigned the archaeological site number 9CH907. They are not, however, recommended eligible for inclusion on the National Register of Historic Places.

Finally, it is possible that archaeological remains may be encountered in the corridor during construction. Construction crews should be advised to report any discoveries of concentrations of artifacts (such as bottles, ceramics, or projectile points) or brick rubble to the project engineer, who should in turn report the material to the State Historic Preservation Office or to Chicora Foundation (the process of dealing with late discoveries is discussed in 36CFR800.13(b)(3)). No construction should take place in the vicinity of these late discoveries until they have been examined by an archaeologist and, if necessary, have been processed according to 36CFR800.13(b)(3).

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We want to thank Mr. Ray Pittman with Thomas and Hutton for his interest in the heritage of the project area and concern that the project be conducted in a sensitive manner. We also appreciate his continued confidence in Chicora and our efforts to preserve and protect the heritage of the region.

A number of individuals have assisted in the course of this study, including several associated with the City of Savannah. We want to thank Ms. Glenda Anderson, the Director of the City's Archives and Library. She took considerable time and effort to help us not only explore for plans and maps, but to also explain the resources which might be available. Mr. Mike Whinner, Savannah Traffic Engineering; Mr. Don Atwell, Storm Waters; and Ms. Cindy White, Engineering were all cooperative in our search for additional information concerning the project area. Likewise, we appreciate the assistance of the Georgia Department of Transportation, including Mr. Robert Brown with the District Construction Engineer's Office in Savannah and Mr. Brian Summers, with Bridge Inspection in Atlanta. As always, the staff and archivists at the Georgia Historical Society were very generous in their time, searching out important materials for. And finally, we appreciate the assistance of the staff at the Georgia State Archaeological Site Files for their assistance and timely response to our request for a site number.

INTRODUCTION

This intensive archaeological survey of the proposed Ogeechee Road bridge replacement in Chatham County was conducted by Dr. Michael Trinkley of Chicora Foundation, Inc. for Mr. Ray Pittman of Thomas and Hutton Engineers in Savannah, Georgia. The work was conducted to assist Thomas and Hutton and their client, the City of Savannah, comply with Section 106 of the National Historic Preservation Act and the regulations codified in 36CFR800. We understand that eventually this project will require an Army Corps of Engineers permit.

The project site consists of the immediate area of the bridge replacement on Ogeechee Road (City Street 188) over the Springfield Canal (sometimes called the Minis Canal, as discussed below). The area of potential effect (APE) is defined as the road crossing and an additional 50 feet in all directions, resulting in a tract measuring about 120 feet east-west and 130 feet north-south(Figure 1). This project is situated on the southwestern fringe of the City of Savannah in north central Chatham County, Georgia (Figure 2). It is situated in a mixed urban and residential area with heavy traffic on Ogeechee Road and nearby Victory Drive.

The study tract consists of a generally level area dominated by the Springfield drainage canal, Ogeechee Road, one standing house, and a series of grassed yard areas. While the area is generally low and poorly drained, it has been so dramatically affected by modern development that its original drainage, much less its original topography, is only barely discernable.

The City of Savannah, as part of its Drainage Improvements project for the Springfield Canal, intends to remove an existing structure at this location; widen the canal, recut the banks, and replace the existing bridge. Landscape alteration, primarily clearing, grubbing, and grading, as well as the removal of the existing bridge and subsequent construction of a new bridge, will cause considerable damage to the ground surface and any archaeological resources which may be present in the survey area. The work will also destroy the existing bridge.

This study, however, does not consider any future secondary impact of the project, including increased or expanded commercial or industrial development of this section of Ogeechee Road. Nor does it consider any of the other components of the project outside the narrowly defined APE.

Figure 1. Vicinity of the proposed bridge replacement, view to the east.

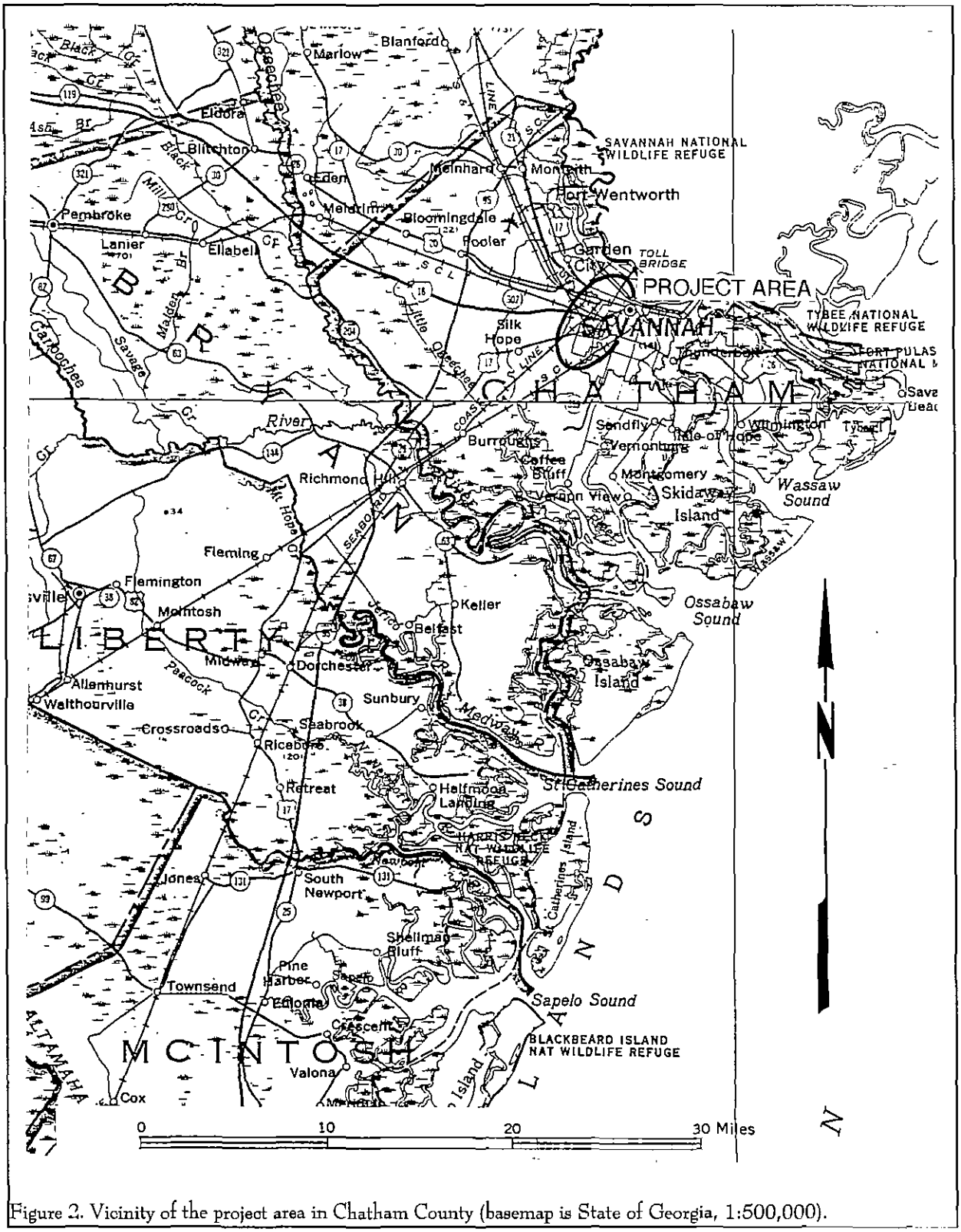

Figure 2. Vicinity of the project area in Chatham County (basemap is State of Georgia, 1:500,000).

We were requested by Mr. Ray Pittman, P.E. of Thomas and Hutton Engineers to conduct a cultural resources survey of the tract in April 2000. This work expanded on an existing project conducted for the Springfield Canal (Trinkley and Barile 1997). This work involved background checks with the Metropolitan Planning Commission's Preservation Officer, Ms. Beth Ryder, as well as a search of the City's Research Library and Archives (with the assistance of Ms. Glenda Anderson). We requested information from the files of the City's Storm Waters Office, the Traffic Engineering Office, the City's Engineering Plans Office, and the Georgia Department of Transportation's Bridge Inspection Office. In addition, historic research was conducted at the Georgia Historical Society.

The archaeological survey was conducted on April 11, 2000 by Dr. Michael Trinkley. The architectural survey of the existing bridge was conducted at the same time. Laboratory work and report production were conducted at Chicora's laboratories in Columbia, South Carolina on April 14.

THE ENVIRONMENT OF THE CITY

Physiographic Area

Savannah is situated in the north central portion of Chatham County in the eastern corner of Georgia bordering the Savannah River about 15 miles northwest of the Atlantic Ocean (see Figure 1). Situated in the Coastal Plain Province, Savannah is still within the Barrier Island Sequence, characterized by elevations ranging from sea level to about 160 feet above mean sea level (AMSL) (Hodler and Schretter 1986:17).

In this area the advance and retreat of the sea have left six distinct shoreline deposits forming step-like progressions of decreasing elevations as one moves toward the ocean. Savannah is found at the junction of three of these: the Silver Bluff is at elevations of less than 10 feet, the Pamlico Formation is at elevations of between 10 and 20 feet, and the Penholoway Formation is between 30 and 70 feet (Wilkes et al. 1974:69). In areas which have been dissected marshes have formed in poor drainages. This area is also often called the Atlantic Coast Flatwoods. It is characterized by nearly level topography and poorly drained soils.

As DeBraham noted, "the Plane of the City is at the highest Place, 30 feet above the surface of the Stream" [Savannah River] (DeVorsey 1971:152). Although the elevation of Chatham County ranges from about 37 to 81 feet AMSL, those in downtown Savannah range from about 37 to 41 feet AMSL, situated almost entirely in the Penholoway Formation.

Looking at a map of early Savannah, it becomes clear that the town was laid out on a sandy ridge between two low marshes which historically where used for rice cultivation. The project area is situated on the western side of the City. The Savannah and Ogeechee (S&O) Canal hugged the western side of the sand ridge then turned into the rice fields when it was built. The Springfield Canal, constructed later than the S&O Canal, was placed further to the west, in some areas in the drainage of Musgrove Creek. Constructed as a drainage canal, it follows low land throughout its course. Elevations in the project area range between about 7 and 10 feet AMSL, clearly evidencing the area's low, wet condition prior to the construction of the canals and other steps to drain this area around Savannah.

Soils and Geology

Although Francis Moore observed "a variety of soils" in the vicinity of Savannah, including "sandy and dry," "clay," and "black rich garden mould well watered" in 1735 (Moore 1840:I:n.p.), it would be the dry sands which would characterize Savannah. DeBraham, for example, recounted that the soils is "a single Stratum of Sand from 24 to 30 feet deep down to the general Springs (water Root) in the Quick Sand, on which Dew and Rains strains" (DeVorsey 1971:154). Richard Haunton (1968:26-27) also comments on Savannah's sandy streets which were impassable in wet weather.

In general, the area around Savannah is predominately flat to nearly level, interspersed with numerous drainages. While some areas, such as the bluff on which the city is situated, are well drained, there are many areas which are naturally poorly drained (at least in part accounting for the city's health problems discussed below). The soils are underlain by and developed from beds of unconsolidated sands, sandy clays, and clays of recent geologic origin. Most of the soils are light colored and contain small amounts of organic matter. All of the soils range from medium to strongly acid in reaction.

The project area is entirely within the Ogeechee-Urban land complex, defined as consisting of about 40% to 60% Ogeechee soils and 20% to 40% urban land, with the rest being Pelham, Ocilla, and Ellabelle soils. This complex is typically found in wet areas. In most places the surface or A horizon soils are very dark gray (10YR3/1) loamy fine sands to upwards

of 20 inches in some areas. Under these are a dark grayish-brown (10YR4/2) sand clay loam (B1tg horizon) (Wilkes et al. 1974:29). The urban land, however, may have an appreciably different profile, typically being altered by cutting, filling, grading, and shaping. Wilkes et al. note that "identification of the soils in urban land is impractical because they are obscured by works and structures" (Wilkes et al. 1974:29), as well as other disturbances.

The associated Pelham, Ocilla, and Ellabelle soils all have poor drainage with surface layers of dark gray to black loamy sands up to a foot in depth. These generally underlain by dark-gray to gray sandy clay loams (Wilkes et al. 1974:9).

Climate and Health

The climate of this section of the Atlantic Coastal Plain province may be classified as humid and subtropical. Most of the air masses which reach Savannah are continental, having been chilled in winder and heated in summer, before ever reaching the City. Because of these continental air masses the seasons change rather abruptly. During intervening periods, however, the weather may be tempered by air from the Atlantic Ocean. The temperature ranges from cold in the winter (with frequent periods of striking warmth) to hot in the summer (with the climate made more uncomfortable by the high relative humidities). The growing season is about 273 days, more than sufficient for a wide range of plants.

The average annual precipitation is 45 inches, with a prominent summer peak and reduced amounts in the winter. This rainfall pattern, however, is subject to tremendous variation — often the wettest year has twice the rainfall as the driest and droughts have been known to cause serious water shortages. DeBraham notes that 1760 was "a Season remarkable for extraordinary Drought" (DeVorsey 1971:152).

This weather pattern has traditionally affected the healthfulness of the Savannah area. DeBraham remarked that:

> The City of Savannah continued from its first Settlement, for near 30 years to be accounted a very healthy Place. The South Carolinians used to come there for recruiting their Health (DeVorsey 1971:160).

However, as soon as Hutchinson's Island and the swamps surrounding Savannah were converted to rice cultivation:

> the Vapours handing upon them . . . rolled in . . . and all the Streets and Houses filled with them, to the Prejudice of its Inhabitants, whose Diseases are in every respect similar to those in the Neighboring Province of South Carolina (DeVorsey 1971:160).

Savannah suffered outbreaks of yellow fever in 1801, 1807, 1808, 1817, 1818, 1819, 1821, 1827, 1831, 1839, 1850, 1852, 1853, and 1854. The most severe, however, was the last epidemics was in 1876 with perhaps 10,000 cases at nearly 1100 deaths. The community began to understand the climatic events that promoted yellow fever, even if they did not yet comprehend the role of the mosquito:

> In 1820, 1854, and I add 1876, when yellow fever raged here as a general epidemic, *a very peculiar and almost identical condition of the atmosphere . . . existed*; that is, each of these epidemics was preceded by a mild winter, an early spring, with a rainfall sufficient to fill the ponds, swamps, and low grounds surrounding the city, with stagnant water, and finally, with the intensely hot and oppressive month of July. From September 6th to October 6th the epidemic raged with terrific violence. At this latter date, the temperature lowered (mean 61°), a change occurred in the direction of the wind (N.E.), and new cases gradually decreased in number but the epidemic did not entirely disappear until the occurrence of a

> light frost on the 14th of November (Dr. J.C. De Hardy quoted in Usinger 1944:149).

These frequent outbreaks, coupled with "ague," "remittent fever," or "billious fever," now known as malaria (Meade 1980), were enough to encourage Savannah to remove the wet culture of rice from the outskirts of the city (Gamble 1901:145).

Richard H. Haunton, in his discussion of Savannah a decade before the Civil War, remarked that:

> to the problems of a semi-tropical climate were added those common to an urban environment in an age of primitive sanitation facilities. Trash and litter were thrown into the City's streets and lanes, which, said the *Georgian* in 1857, were "in a condition fit to be classed among the dirtiest and most unwholesome thoroughfares in the South." "Offal and other putrying matter" lay exposed on the outskirts of town. The City's privies, inadequately ventilated and infrequently cleaned, presented the most serious problem to the health authorities (Haunton 1968:283).

Hardee (n.d.:127) reports that "in almost all private houses of any importance there was a well" during the colonial and early antebellum periods. These water sources, often no deeper than 16 feet, were frequently contaminated with privy seepage or overflows. In 1854 Savannah's first waterworks began supplying water from the Savannah River, via Musgrove Creek on the western side of the city. In 1887 the city switched to artesian wells, significantly improving the quality of the potable water supply (Hardee n.d.:47).

Floristics

Francis Moore, traveling through Savannah in 1735, left one of the few early accounts of the region's natural vegetation, noting that in the Trustee's Garden just east of the City was a stand of:

> old wood, as it was before the arrival of the colony here. The trees in the grove are mostly bay, sassafras, evergreen oak, pellitory [prickly ash, also known as the toothache tree] hickory, American Ash, and the laurel tulip (Moore 1840:I:n.p.).

This natural vegetation, however, had been almost totally cleared away by Oglethorpe's original settlers. In its place were introduced a broad range of exotic plants, such as lemons and olives. Alice G.B. Lockwood observes that the settlers were still struggling, in 1742, "with the culture of such fruits as oranges and 'limmons,' loath to believe that they could not raise them here as well as they could in the same latitude on the other side of the world" (Lockwood 1934:II:272). In spite of the problems, DeBraham noted thriving "two large Olive Trees, some Sevil Orange, Apple, Plumb, Peach, Mulberry, honey Locust, one Apricot, and one Amerel Cherry Tree" upwards of a decade after abandonment (DeVorsey 1971:155).

Visitors to Savannah during the early nineteenth century were greeted with unpaved streets, many of which were covered in grass (1819 account by Adam Hodgson, quoted in Lockwood 1934:II:275). By 1829 a visitor noted the presence of "groves of trees planted in the streets." In particular:

> In all the streets and squares of Savannah, most of which are very tastefully laid out, numerous rows of Pride-of-India trees [China-Berry] have been planted, which serve to shade the walks, and give a tropical air to the scene (1827 account by Captain Basil Hall, quoted in Lockwood 1934:II:275).

Yet another visitor to Savannah, in 1833, remarked that "its streets are planted so thick with Pride-of-China that the small dark houses are hardly seen," while an 1829 visitor, Charles Joseph Latrobe, remarked that:

> the broad rectangular streets are lined with luxuriant Melia [China-Berry] and Locust-trees, and there are

> frequent open squares with grass-plots" (quoted in Lockwood 1934:II:275).

While all of these accounts emphasize the regularity and beauty of Savannah, it is likely that as an urban environment the town as possessed its "seedier" side. It is also certain that Savannah's biotic community was largely shaped by the intentional (i.e., garden planning and deforestation) and unintentional (i.e., fires) actions of its inhabitants. Both, however, created an unnatural, disturbed environment open to plants typically called "weeds," many of which are stenotrophic and thrive on enriched (or polluted) conditions.

Outside of the town core, something approaching a rural setting was quickly encountered. In the early nineteenth century Savannah's west side was abutted by Vale Royal and Springfield Plantations, both characterized by low, poorly drained lands. Vegetation inland from the Savannah River edge in this area was likely that of a lowland broadleaf evergreen forest. Common trees would have been water oak, live oak, laurel oak, southern magnolia, pignut hickory, white oak, American holly, and spruce pine, with an understory of saw palmetto, sparkelberry, and swamp palm. Such areas also contain mesic hammocks, some of which are intermediate between the higher portions of the floodplains and the more xeric upland pine forests. These hammocks may contain willow oak, sweet gum, and red bay (see Wharton 1977).

Today, the project area is dominated by the urban setting. Vegetation consists of lawn grass, occasional "weeds," and second-growth hardwood scrub.

PREHISTORIC AND HISTORIC OVERVIEW

Previous Work

In 1984 Dr. Chester DePratter and Mr. Roy Doyon, then with Southeastern Archaeological Services, conducted an investigation of portions of the S&O and Springfield canals as part of an Army Corps project (DePratter and Doyon 1984). The 4.7 mile-long survey began at the Savannah River, under the Talmadge Bridge and continued southward past the Laurel Grove Cemetery. The study involved historic research, as well as field investigations conducted during the winter and primarily at low tide. An area of 100 feet on either side of the Canal was included in the survey and "a limited number of posthole tests were excavated in a search for buried sites." DePratter and Doyon, however, found that:

> recent fill along much of the canal prevented discovery of such sites. Post hole testing was determined to be of no use in site discovery operations, and was thus discontinued after several tests provided no useful information (DePratter and Doyon 1984:29).

Although the study does not specify how many tests were dug, or their locations, they do indicate that no prehistoric sites were found, attributing this to the very low, wet soils through which the canal was excavated. They instead focus on identifying features associated with historic developments in the area. No sites were identified in the study APE.

In 1997 additional survey of the Springfield and S&O Canal was conducted by Chicora (Trinkley and Barile 1997), although that study stopped prior to Ogeechee Road.

Prehistoric Synopsis

Overviews for Georgia's prehistory, while of differing lengths and complexity, are available in virtually every compliance report prepared for the region. There are, in addition, some "classic" sources well worth attention, such as Williams' edited works of Antonio J. Waring, Jr. (Williams 1968).

These can be supplemented with a broad range of theses and dissertations, such as Lewis Larson's examination of coastal subsistence technology (Larson 1969), Chester DePratter's discussion of Georgia chiefdoms (DePratter 1983), or Morgan Crook's examination of Mississippian community organization along the coast (Crook 1978).

Also extremely helpful, perhaps even essential, are a handful of recent local synthetic statements, such as that offered by Sassaman and Anderson (1994) for the Middle and Late Archaic and Anderson et al. (1992) for the Paleoindian. Only a few of the many sources are included in this study, but they should be adequate to give the reader a "feel" for the area and help establish a context for the various sites identified in the current study. For those desiring a more general synthesis, perhaps the most readable and well balanced is that offered by Judith Bense (1994), *Archaeology of the Southeastern United States: Paleoindian to World War I.* Figure 3 offers a generalized view of Georgia's cultural periods.

Paleoindian Period

The Paleoindian Period, most commonly dated from about 12,000 to 10,000 B.P., is evidenced by basally thinned, side-notch projectile points; fluted, lanceolate projectile points; side scrapers and end scrapers; and drills (Coe 1964; Michie 1977; Williams 1968). Some even suggest pushing the beginning date to as early as 14,000 B.P. (Oliver 1981). Non-fluted points such as the Hardaway Side-Notched and Palmer Corner-Notched types, usually accepted as Early Archaic, are occasional seen as representatives of the terminal phase of the Paleoindian Period.

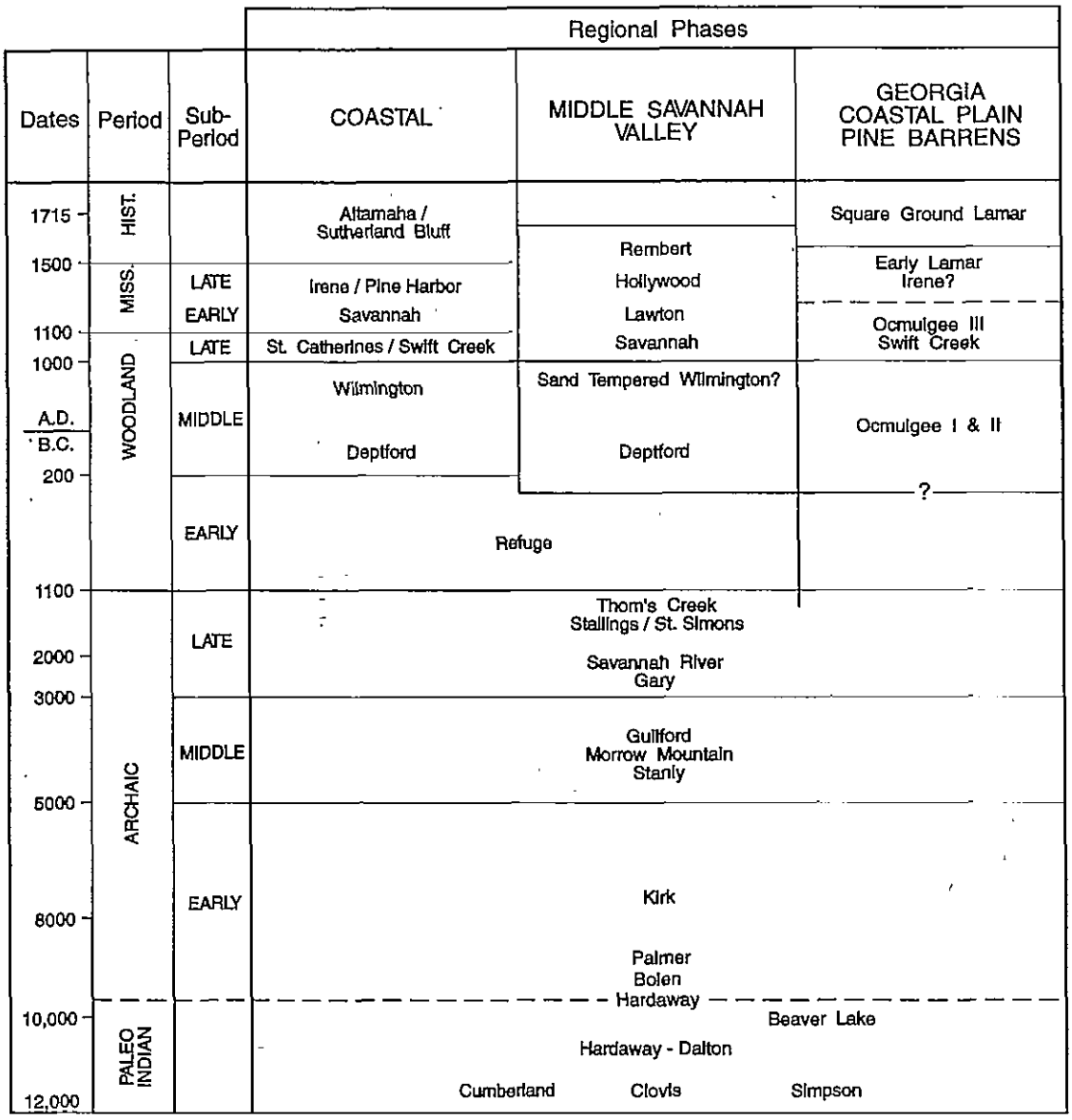

Figure 3. Cultural periods for the Georgia coastal region (adapted from Braley 1990; DePratter 1979:Table 30; Sassaman et al. 1990:Table 1).

The Paleoindian occupation, while widespread, does not appear to have been intensive. Artifacts are most frequently found along major river drainages, which Michie interprets to support the concept of an economy "oriented toward the exploitation of now extinct mega-fauna" (Michie 1977:124). Survey data for Paleoindian tools, most notably fluted points, is rather sparse for Georgia (Ledbetter et al. 1996). In spite of this, the distribution offered by Anderson (1992:Figure 5.1) reveals a rather general, and widespread, occurrence throughout the region. The recognition of Paleoindian sites in Georgia is hindered not only by a lack of research, but also by the small size of typical sites (often the Paleoindian component may be recognized by a single tool) and the heavy amount of reworking and curation seen in Paleoindian tools from Georgia (Ledbetter et al. 1996:261).

Distinctive projectile points include lanceolates such as Clovis, Dalton, Suwannee, and perhaps the Hardaway (Anderson 1990:7-9). During the later portion of the Paleoindian, many researchers (see Snow 1977:3-4, Figure 1 for example) borrow from Florida and suggest that these more classic large lanceolate points were replaced by smaller points with concave bases, such as the Tallahassee, Sante Fe, and Beaver Lake (Bullen 1975:45-47; Milanich and Fairbanks 1980:45). In addition, points such as the Bolen Plain and Bolen Beveled (Bullen 1975:44, 49-53; Milanich and Fairbanks 1980:45) are thought to be intermediate between the Late Paleoindian and Early Archaic in much the same way as the Palmer of South and North Carolina is regarded.

Unfortunately, relatively little is known about Paleoindian subsistence strategies, settlement systems, or social organization (see, however, Anderson 1992 for an excellent overview and synthesis of what is known). Generally, archaeologists agree that the Paleoindian groups were at a band level of society (see Service 1966), were nomadic, and were both hunters and foragers. While population density, based on isolated finds, is thought to have been low, Walthall suggests that toward the end of the period, "there was an increase in population density and in territoriality and that a number of new resource areas were beginning to be exploited" (Walthall 1980:30). although at least one local collector has reported early points from the general area. This near absence is attributed to the lack of readily available raw materials. Should Paleoindian materials be encountered, Georgia has developed a rather detailed preservation plan which outlines a broad range of appropriate research questions (Anderson et al. 1990).

The prevalence of Paleoindian occupation is dramatically increased, however, if Bolen and Palmer points are included. In addition, Snow comments that "large choppers, unifacial blades, and scrapers" are found in the Coastal Plain, but can be attributed to the Paleoindian Period only on the basis of their "patination; some appear chalky, and display a general likeness to Paleo-Indian material of known antiquity" (Snow 1977:3).

Archaic Period

The Archaic Period, which dates from 10,000 to 3,000 B.P.[1], does not form a sharp break with the Paleoindian Period, but is a slow transition characterized by a modern climate and an increase in the diversity of material culture. Associated with this is a reliance on a broad spectrum of small mammals, although the white tailed deer was likely the most commonly exploited animal. Archaic period assemblages, exemplified by corner-notched and broad-stemmed projectile points, are fairly common, perhaps because the swamps and drainages offered especially

[1] The terminal point for the Archaic is no clearer than that for the Paleoindian and many researchers suggest a terminal date of 4,000 B.P. rather than 3,000 B.P. There is also the question of whether ceramics, such as the fiber-tempered Stallings ware, will be included as Archaic, or will be included with the Woodland. Oliver, for example, argues that the inclusion of ceramics with Late Archaic attributes "complicates and confuses classification and interpretation needlessly" (Oliver 1981:20). He comments that according to the original definition of the Archaic, it "represents a preceramic horizon" and that "the presence of ceramics provides a convenient marker for separation of the Archaic and Woodland periods (Oliver 1981:21). Others would counter that such an approach ignores cultural continuity and forces an artificial, and perhaps unrealistic, separation. Sassaman and Anderson (1994:38-44), for example, include Stallings and Thom's Creek wares in their discussion of "Late Archaic Pottery."

attractive ecotones.

Diagnostic Early Archaic artifacts include the Kirk Corner Notched point. As previously discussed, Palmer and Bolen points may be included with either the Paleoindian or Archaic period, depending on theoretical perspective. As the climate became hotter and drier than the previous Paleoindian period, resulting in vegetational changes, it also affected settlement patterning as evidenced by a long-term Kirk phase midden deposit at the Hardaway site (Coe 1964:60). This is believed to have been the result of a change in subsistence strategies. Other hallmarks of the Early Archaic are often considered to include a continued reliance on high quality lithic raw materials, a highly curated tool kit, high geographic mobility, and periodic aggregation of band-sized groups (see Daniel 1996).

Settlements during the Early Archaic suggest the presence of a few very large, and apparently intensively occupied, sites which can best be considered base camps. Hardaway might be one such site. In addition, there were numerous small sites which produce only a few artifacts — these are the "network of tracks" mentioned by Ward (1983:65). The base camps produce a wide range of artifact types and raw materials which has suggested to many researchers long-term, perhaps seasonal or multi-seasonal, occupation. In contrast, the smaller sites may be thought of as special purpose or foraging sites.

There are several intensively occupied Early Archaic sites which are of special importance in our understanding of this period, including the Lewis East and Pen Point sites in South Carolina (for a review, see Sassaman and Anderson 1994:84-85) and the Taylor Hill site in Georgia (Elliott and Doyon 1981).

Middle Archaic (8,000 to 6,000 B.P.) diagnostic artifacts include Morrow Mountain, Guilford, Halifax and Stanly projectile points. Ledbetter remarks that a possible regional variant includes the side-notched or corner-notched points similar to Halifax, as well as an elongated point known as the Brier Creek Lanceloate (Ledbetter 1995:12; Sassaman and Anderson 1994:27). Also observed during this period is the MALA (Middle Archaic-Late Archaic) point, which are typically made from heat-treated chert and considered by some to be a regional variant of the Benton type (see Sassaman 1985; see also Sassaman and Anderson 1994:27-29 for a more updated discussion).

Much of our best information on the Middle Archaic comes from sites investigated west of the Appalachian Mountains, such as the work by Jeff Chapman and his students in the Little Tennessee River Valley (for a general overview see Chapman 1977, 1985a, 1985b). Closer to Georgia, Ledbetter (1995:12) notes that the work at Pen Point on the Savannah River, as well as work at Fort Gordon (9CB81, see Braley and Price 1991), is directly applicable.

There is good evidence that Middle Archaic lithic technologies changed dramatically. End scrappers, at times associated with Paleoindian traditions, are discontinued, raw materials tend to reflect the greater use of locally available materials, and mortars are initially introduced. Curated tools are less common. Associated with these technological changes there seem to also be some significant cultural modifications. Prepared burials begin to more commonly occur and storage pits are identified. The work at Middle Archaic river valley sites, with their evidence of a diverse floral and faunal subsistence base, seems to stand in stark contrast to Caldwell's Middle Archaic "Old Quartz Industry" of Georgia and the Carolinas, where axes, choppers, and ground and polished stone tools are very rare.

Coastal Plain settlement models for the Middle Archaic have traditionally focused on the near absence of diagnostic material. It has been suggested that the "Pine Barrens" were unattractive or could not support dense occupation. This view has been espoused by Larson (1980). As Sassaman and Anderson (1994:149) suggest, it may be that Middle Archaic groups avoided the coastal plain not because the area was impoverished, but rather because the available resources were patchy and this "patchiness" resulted in high "hidden" costs such as constant movement, increasing specialization, and the need to store larger quantities of food.

Sassaman and Anderson (1994:150-152) also

briefly review the evidence supporting a focus on swamp floodplains during the Middle Archaic, noting that while such environmental settings can be difficult to identify, they do seem to be associated with large, multicomponent sites. In addition, they illustrate the mounting evidence to support seasonal rounds or seasonal transhumance between the coast and the interior (e.g., Milanich 1971).

The Late Archaic, usually dated from 6,000 to 3,000 or 4,000 B.P., is characterized by the appearance of large, square stemmed Savannah River projectile points (Coe 1964). In addition, research in the Georgia Coastal Plain suggests the presence of Gary Points, having a triangular blade, squared shoulders, a contracting stem, and a rounded or occasionally pointed base (see Smith 1978 for examples from Laurens County, Georgia). These Late Archaic people continued to intensively exploit the uplands although the Fort Stewart data appears so skewed compared to other regions, that it is difficult to understand exactly what might have been happening in this area.

One of the more debated issues of the Late Archaic is the typology of the Savannah River Stemmed and its various diminutive forms. Oliver, refining Coe's (1964) original Savannah River Stemmed type, developed a complete sequence of stemmed points that decrease uniformly in size through time (Oliver 1981, 1985). Specifically, he sees the progression from Savannah River Stemmed to Small Savannah River Stemmed to Gypsy Stemmed to Swannanoa from about 5000 B.P. to about 1,500 B.P. He also notes that the latter two forms are associated with Woodland pottery. This reconstruction is still debated with a number of archaeologists expressing concern with what they see as typological overlap and ambiguity. They point to a dearth of radiocarbon dates and good excavation contexts at the same time they express concern with the application of this typology outside the North Carolina Piedmont where it was originally developed (see, for a synopsis, Sassaman and Anderson 1990:158-162, 1994:35).

In addition to the presence of Savannah River points, the Late Archaic also witnessed the introduction of steatite vessels (see Sassaman 1993), polished and pecked stone artifacts, and grinding stones. Some also include the introduction of fiber-tempered pottery about 4000 B.P. in the Late Archaic (for a discussion see Sassaman and Anderson 1994:38-44; Sassaman 1993:16-41). This innovation is of special importance along the Georgia and South Carolina coasts.

Coupled with the presence of fiber-tempered Stallings or St. Simons pottery (Griffin 1943; DePratter 1991:159-162) are also a broad range of worked bone and shell items, such as engraved bone pins, whelk columella beads, and antler projectiles. Coupled with these artifacts are shell rings — doughnut shaped heaps of shells ranging from only a few feet in height to over 20 feet (see Trinkley 1985 for a general overview). There is evidence that these shell rings represent gradually formed habitation sites with occupation taking place on the rings. The sites appear to reflect permanent, year-round occupation suggesting that the coastal St. Simons and co-evil Thom's Creek (found primarily northeast of the Savannah River in South Carolina) groups were able to schedule their subsistence activities to allow stable settlements (Trinkley 1980).

There is evidence that during the Late Archaic the climate began to approximate modern climatic conditions. Rainfall increased resulting in a more lush vegetation pattern. The pollen record indicates an increase in pine which reduced the oak-hickory nut masts which previously were so widespread. This change probably affected settlement patterning since nut masts were now more isolated and concentrated. From research in the Savannah River valley near Aiken, South Carolina, Sassaman has found considerable diversity in Late Archaic site types with sites occurring in virtually every upland environmental zone. He suggests that this more complex settlement pattern evolved from an increasingly complex socio-economic system. While it is unlikely that this model can be simply transferred to the Coastal Plain of Georgia without an extensive review of site data and micro-environmental data, it does demonstrate one approach to understanding the transition from Archaic to Woodland.

Woodland Period

Sassaman (1993:55) recalls the cautions of

Joseph Caldwell, who found "the regional landscape of the Early Woodland ceramic traditions" a "fascinating array of local developments and diverse extralocal influences." As a consequence, the Early Woodland becomes quickly confused and difficult to interpret.

As previously discussed, there are those who see the Woodland beginning with the introduction of pottery. Under this scenario the Early Woodland may begin as early as 4,500 B.P. and continued to about 2,300 B.P. Diagnostics would include the small variety of the Late Archaic Savannah River Stemmed point (Oliver 1985) and pottery of the Stallings, St. Simons, and (to a lesser extent) Thom's Creek series (Griffin 1943; Trinkley 1976; DePratter 1991:159-162). The fiber-tempered Stallings and St. Simons wares and the sandy paste Thom's Creek wares are decorated using punctations, jab-and-drag, and incised designs (Trinkley 1976).

Others would have the Woodland beginning about 3,000 B.P. with the introduction of the Refuge wares, also characterized by sandy paste, but often having only a plain or dentate-stamped surface (DePratter 1976, 1991:163-167; Waring 1968). There is evidence that the punctated and dentate surface decorations are gradually replaced by plain and simple stamped treatments. Sassaman et al. (1990:191) report a distribution similar to the earlier fiber-tempered and Thom's Creek wares, and suggest that the Refuge wares evolved directly from these earlier antecedents.

On the Georgia coast the Refuge has been subdivided into three subphases, with plain and dentate stamping found during the entire period. Toward the end, linear and check stamping is introduced, sometimes with grog or clay tempering. Typically these sites are found on ridges or other high, sandy ground, although DePratter also notes that many sites have been inundated by the rising sea level and are situated in the marsh (DePratter 1976:6-8).

Oelmer ceramics, which admittedly are poorly understood (DePratter 1979:177), are likely a Refuge-Deptford transition. DePratter describes the pottery's check stamping as consisting:

> of small, rhomboid or diamond checks, carefully applied to the vessel surface without overstamping. The [Oelmer] complicated stamping is somewhat unusual, consisting of small, carefully executed line-filled triangles, nested diamonds, and other motifs (DePratter 1979:117).

He observes that the largest sample comes from the Oelmer site and that other researchers have occasionally called the pottery Deptford Geometric Stamped. The pottery is so uncommon that it may well represent only a variety of either Refuge or Deptford.

In spite of the relative lack of detailed investigations at Early Woodland sites, it seems likely that the subsistence economy was based primarily on deer hunting and fishing, with supplemental inclusions of small mammals, birds, reptiles, and shellfish. This is based on an impression that there was a continuation of a generalized Late Archaic pattern, which may or may not be appropriate.

Somewhat more information is available for the Middle Woodland, typically given the range of about 2,500 B.P. to about 1,200 B.P. The most characteristic pottery of this time period is Deptford, although both Swift Creek and Wilmington are likely late additions. Regardless, the Middle Woodland is best understood in the context of Deptford, which has been carefully described by DePratter (1979:118-119, 123-127), who suggests two divisions with check stamping and cord marking gradually being supplemented by complicated stamping. The introduction of clay or grog tempered Wilmington wares follows on the heels of the Deptford phase.

We do not, however, mean to imply that the origin of the Middle Woodland is well understood. In fact, Sassaman takes some pains to emphasize that the transition from Refuge to Deptford is not well understood:

> the Refuge-Deptford problem is the result of numerous regional processes that converge in the Savannah River region between 3000 and 2000 B.P. The sociopolitical entities that

> existed on the coast and in the interior during the fourth millennium dissolved after about 2400 B.P., resulting in the dispersal of small populations across the region. . . . Pottery designs changed from highly individualistic punctation and incision to the (seemingly) anonymous use of dowels for stamping. . . . the use of a carved paddle for simple stamping should mark the "blending" of Refuge and Deptford culture, or, more accurately, reflect the subsumption of Refuge culture by the expanding Deptford complex.
>
> To complicate matters, the tradition of cord-wrapped paddles makes its way into the South Carolina area sometime after 2500 B.P. (Sassaman 1993:118-119).

The work by Milanich (1971) and Smith (1972), coupled with the considerable additional site-specific research (see, for example, DePratter 1991; Sassaman 1993:110-125; Thomas and Larsen 1979) provides an exceptional background for this particular phase. Milanich's (1971) interpretation of a coastal-estuarine settlement model with interior occupation limited to short-term extractive activities, while still useful, has been modified through the discovery of a number of interior base camps. In fact, there seems to be evidence for a number of interior seasonal or perhaps even permanent base camps, although there is as yet no convincing evidence of horticulture. Anderson (1985:48) provides a brief overview of some very significant concerns. He notes that Milanich's interpretation that the interior river valleys were used by small, residentially mobile foraging groups which dispersed from large coastal villages is clearly not correct. In fact, just the opposite appears more likely, with coastal use and settlement being seasonal (Anderson 1985:48-49).

DePratter (1979:119, 128-131; 1991) takes the position that Wilmington pottery post-dates Deptford, ushering in the use of grog or clay as a tempering material in the late Middle Woodland. The check stamping and complicated stamped motifs found in the Deptford continue, except with clay tempering for a short time. Called Walthour, these wares are described by DePratter (1991:174-176), but they apparently existed for only a short period of time before being completely replaced by cord marking (DePratter 1979:119).

Wilmington phase sites are rather poorly understood in the Georgia Coastal Plain. No only has there been little effort to develop settlement models incorporating the Wilmington, there is very little technological research on the pottery itself. The potential importance of the Wilmington phase is perhaps evidenced by Snow's (1977) survey of the Ocmulgee Big Bend area, where large quantities of what he called "Ocmulgee I" pottery was found. He specifically states that this ware "is not Wilmington" (Snow 1977:42), noting that while there is some clay tempering (certainly not the abundant grog tempering of classic Wilmington), much of the pottery has a sandy paste (Snow 1977:36). Perhaps the most distinctive characteristic of this pottery (which is associated with at least one burial mound) is a heavy folded rim. Folded rims seem to gradually drop out, while the paste becomes increasingly more gritty in succeeding Ocmulgee II and III types.

Curiously, coupled with the coastal Wilmington material is what the W.P.A. researchers called Chatham County Cord Marked (DePratter 1991:179-180), a grit-tempered (rather than clay-tempered) heavy cord marked pottery. DePratter remarks this is possibly related to the "sand tempered" pottery that Stoltman (1974:63), further up the Savannah River, called "Wilmington."

It seems that Georgia, just like South Carolina and North Carolina, is struggling to comprehend, and deal with, a broad array of Middle Woodland cord marked pottery.

Although Deptford pottery is well recognized, the associated lithic technology is not. For Florida, Milanich and Fairbanks (1980:75-76) mention only that "medium-sized triangular" points are present. Yadkin-like triangular points are reported to be found

with Wilmington sites (Anonymous 1940). Snow (1977:Figure 12) reports a broad range of small triangular points with his Ocmulgee I, II, and III cord marked pottery. The bulk of these appear to resemble more traditional Yadkin and Caraway points (Coe 1964:30-32, 49).

The Middle Woodland cannot be fully appreciated without reference to Hopewellian influences, whether the presence of coastal sand burial mounds and their evidence of status differences (e.g., Thomas and Larsen 1979) or the presence of occasional exchange goods. Sassaman et al. note that while there is a lack of "obvious" Hopewellian influence in the Savannah area, there is nevertheless evidence of a "higher order of sociopolitical complexity" (Sassaman et al. 1990:14). They note that the broad similarities in ceramic design evidence the movement of ideas, or "interprovincial integration," not seen in the Early Woodland. The presence of coastal shells found at interior sites demonstrates the movement of goods.

In some respects the Late Woodland (1,200 B.P. to 400 B.P.) may be characterized as a continuation of previous Middle Woodland cultural assemblages. While outside the Carolinas and Georgia there were major cultural changes, such as the continued development and elaboration of agriculture, the coastal South Carolina and Georgia groups settled into a lifeway not appreciably different from that observed for the previous 500-700 years. From the vantage point of Middle Savannah Valley Sassaman and his colleagues note that, "the Late Woodland is difficult to delineate typologically from its antecedent or from the subsequent Mississippian period" (Sassaman et al. 1990:14). This situation would remain unchanged until the development of the South Appalachian Mississippian complex (see Ferguson 1971). Anderson (1994:366-368) provides a basic review of the Late Woodland and Mississippian ceramic sequence at the mouth of the Savannah River. This review is particularly useful since it also compares and contrasts these developments to those in the middle and upper reaches of the Savannah (Anderson 1994:368-377).

Milanich (1971:148-149) and Caldwell (1970:91) saw the St. Catherines pottery, which seemingly characterizes the Late Woodland, as an important aspect in the gradual progression from Deptford to Wilmington to St. Catherines to Savannah. Perhaps the most succinct summary of the Georgia Late Woodland St. Catherines phase is that offered by DePratter and Howard (1980:16-17). Significantly, they note that most of the Georgia data comes from burial mound excavations, "because only limited village [and presumably shell midden] excavations have been conducted" (DePratter and Howard 1980:16). Even with burials there is a limited range of artifact types — shell beads, worked whelk shell bowls or drinking cups, bone pins, and triangular projectile points. Not only is little known about village life, nothing is known concerning residential structures and there is no good evidence of agricultural crops. Once again, the Late Woodland is presented as little more than an extension of the previous Middle Woodland lifeways.

DePratter (1979:119) provides a generalized introduction to the St. Catherines phase, noting its original definition by Caldwell (1971) and remarking that the ceramics are:

> characterized by finer clay tempering than that of preceding Wilmington types and by the increased care with which the ceramics were finished. The lumpy contorted surface of Wilmington types was replaced by carefully smoothed and often burnished interiors and exteriors (DePratter 1979:119).

DePratter also notes that the temper in the St. Catherines pottery consists of "crushed sherd or crushed low-fired clay fragments" (DePratter 1979:131). One of the few studies of prehistoric temper which involved detailed chemical and petrographic analyses included a sample of six St. Catherines sherds (Donahue et al. n.d.) The study found that the trend toward decreasing grain size of the aplastic component, begun in the Middle Woodland, continues into the Late Woodland. In contrast, the grog inclusions are coarse, ranging from about 2 to 3 mm, and they contain quartz grains (perhaps reflecting the temper of the crushed sherds).

More recent investigation of St. Catherines

pottery in South Carolina found that while there is considerable variability in both size and frequency of temper, there is no compelling evidence that sherds were being crushed and used as temper. The most likely explanation for the observed similarity of both paste and temper is that the temper represents dried lumps of clay which have been incorporated back into the clay during the forming of vessels. On the other hand, the same study also found that there appear to be distinct chemical differences between the paste and temper. This suggests that the dried clay used as tempering was perhaps "left-over" from earlier potting episodes (Trinkley and Adams 1994:58-60).

Although the conventional wisdom is that the St. Catherines phase drew to a close around A.D. 1150, there is mounting evidence that the phase may extend into the thirteenth or fourteenth century A.D. (see Trinkley and Adams 1994:108-110, 114-115). There may be a blurring of Middle and Late Woodland lifeways well into later periods. The resulting cultural conservativism may help explain the presence of relatively few large Late Woodland villages and the apparent absence of corn agriculture until very late along the coast.

On the coast, Hopewellian influences may be more obvious than originally thought, if the multitude of sand burial mounds being investigated by the American Museum of Natural History are as early as reported. For example, the investigations at South End Mound II on St. Catherines Island suggest the earliest burial, placed in a pit about A.D. 1000, was associated with a copper sheet, had copper earspools, and included a diabase-like pendant (Larsen and Thomas 1986:25).

Moving away from the coast and into the inner Coastal Plain there is considerably less data. It is difficult, for example, to determine how far inland St. Catherines wares are reported, or if they exist at all. Once again relying on Snow's examination of the Ocmulgee Big Bend area, there is no evidence of St. Catherines pottery. Instead, it seems that the cord marked Ocmulgee wares fill the gap. Snow even mentions that his Ocmulgee III pottery, which is found with small triangular points, shows "some traits suggestive of closer ties with coastal Savannah II Cordmarked ceramics" (Snow 1977:43), suggesting that the Ocmulgee II wares may be Late Woodland.

Better known is the Swift Creek Phase, often viewed as either late Middle Woodland or Late Woodland. Swift Creek materials extend from the Gulf of Florida, where the phase was first identified (Willey 1949:378-383) into the coastal plain and piedmont of Alabama, Georgia, and South Carolina. Diagnostic artifacts include pottery with intricate, well-executed, curvilinear complicated stamped motifs. Also present are occasional suggestions of Hopewell ritual, especially among the burials. Sites include semi-permanent villages, some with burial mounds and occasionally small platform-like mounds, as well as small camps (Jefferies 1994; Keller et al. 1962; see also Sassaman et al. 1990:205-206 for a regional overview). Although there are few appropriate local studies, Snow does illustrate a number of early and late Swift Creek sherds from the Ocmulgee Big Bend area (Snow 1977:Figure 6a, 7a, 7b).

South Appalachian Mississippian

As Schnell and Wright (1993:2) observe, "Mississippian" means different things to different people — even to its earliest researchers. To Willey (1966) it meant a particular group of traits. To Griffin (1985) it meant a complex social and technological interaction sphere. To Smith (1986) it was defined as an adaptive strategy. The meaning is further distorted, or at least affected, when the issue is viewed from a strict temporal or chronological orientation, such as this presentation (since to us, the period covers the period from about A.D. 900 to A.D. 1500).

The Mississippian is viewed rather basically by Thomas et al. (1995:114). They focus on a simple coastal chronology based almost entirely on the results of excavations at Irene (Caldwell and McCann 1941) and the resulting synthesis by DePratter (1979:Table 30; 1991:183-193). In this scenario the Savannah Phase, consisting of three subphases, is followed by the Irene, broken into two subphases.

The Savannah, characterized by cord marking, is seen as developing from earlier cultures. Present are flat-topped temple mounds, although these are seen by some researchers to be less common in the Altamaha

region. While the settlement system is very similar to that of the Late Woodland, there are also nucleated settlements found near estuaries and along freshwater rivers further inland. Although agriculture is seen by many as almost essential, there is no good evidence for corn or other domesticated crops.

Savannah II is distinguished by the introduction of check stamping and Savannah III is defined by the presence of complicated stamping. The Savannah III Complicated Stamped pottery is primarily curvilinear, often of concentric circles or oval motifs. Sassaman et al. (1990:207) suggest that the current temporal ranges are likely too restrictive for these subphases and suggest instead broader period of perhaps A.D. 1100 to 1200 for Savannah II and perhaps A.D. 1200 to 1300 for Savannah III.

The Savannah phase gives way to what is often called the Irene Phase, probably beginning about A.D. 1300. The Irene I Phase is identified by the appearance of Irene Complicated Stamped pottery using the filfot cross and line block motifs. Not only are these motifs different from the earlier Savannah Complicated Stamped designs, but the Irene ware is characterized by grit inclusions and a coarse texture, compared to the Savannah's sandy inclusions and fine to medium-grained paste.

Also present in Irene collections are a range of rim decorations, including nodes, rosettes, and fillet appliques. Although incising is found in very low quantities during this early period, the succeeding Irene II phase is characterized by bold incising. The mouth of the Savannah River, however, was likely abandoned by the end of the Irene I Phase since little incising is found in this area.

Larson (1955) sought to distinguish his central coastal Pine Harbor incised material from the Irene wares of the northern coast. Braley (1990:98) suggests that the Pine Harbor material is both geographically and temporally distinct from Irene. He also suggests that the presence of the Pine Harbor Phase on the middle coast may help explain the apparent abandonment of the Savannah area, suggesting that the coastal groups shifted southward in order to make themselves more accessible to the interior Oconee chiefdoms (Braley 1990:99).

The situation, however, become considerably more muddled when the view is shifted inland — to the Pine Barrens in the vicinity of Fort Stewart, for example. Schnell and Wright explain that "almost nothing can be found in the literature" (Schnell and Wright 1993:41).

Using data from several Ocmulgee Big Bend sites, they note that there is a small collection of cord marked pottery, sometimes incorporated in an assemblage of plain and roughened wares, which dates from perhaps A.D. 800 to A.D. 1400 — falling within the temporal limits of the Mississippian. They note that Crook, who defined a Middle Ocmulgee Phase dating from A.D. 200 to about 900 and a Late Ocmulgee Phase from about A.D. 900 to 1600, distinguishes the two by increasing frequencies of triangular points and cord marked pottery. They also note that Crook suggests these occupations are associated with "conservative" cultural adaptations — an argument similar to that advanced for the late occurrence of St. Catherines wares along the South Carolina coast.

Snow, also exploring the Ocmulgee and Satilla river drainages, defines what he calls the Square Ground Lamar ceramic assemblage which apparently is coeval with late Irene (Snow 1990). Prior to this, the area is apparently dominated by the cord marked Ocmulgee III pottery. The Square Ground wares have 10 to 12 incised lines around the rim and below a stamp consisting of a central dot with four lines radiating out. Each of the resulting four quadrants is usually filled with chevrons (Snow 1990:Figure 5). He suggests that the "Square Ground Lamar pottery may equate with [the] Hitchiti people" of the lower Ocmulgee (Snow 1990:87).

Protohistoric and Historic Contact

The Protohistoric ceramic assemblages along the immediate coast are typically identified as Altamaha (DePratter 1979), King George (Caldwell 1943), San Marcos (Smith 1948), and Sunderland Bluff (Larson 1978). The period is often dated from about A.D. 1550 to 1700, although Green (1991:106) argues that minimally it should be extended to 1715 in order to

include the Yemassee-produced pottery of South Carolina and perhaps even as late as 1763 to coincide with Smith's (1948) St. Augustine period.

Regardless of precise dating, the ware is thought to include complicated stamping (including rectilinear and curvilinear motifs), check stamping, incising, plain, burnished plain, and a red filmed ware. Green suggests a continuum from Irene to Altamaha. Vessel forms include jars, bowls, plates, and pitchers. Some include strap and loop handles as well as foot rings, clearly revealing a strong European influence. The San Marcos pottery is associated with limestone tempering, while the Altamaha and King George wares exhibit fine grit or sand.

Snow (1990:92-93) reports a dramatic decrease in the number of Altamaha sites compared to the preceding Square Ground sites in the Pine Barrens of the Ocmulgee Big Bend area. He also notes that in addition to Altamaha ceramics, there are also examples of "Miller ceramics from the Apalachee region of northwest Florida," "a smoothed-over check stamped ware, similar to Leon Check Stamped from mission sites in north Florida" and even "Ocmulgee Check Stamped known from the Macon Plateau site." Also present are "European trade items such as glass beads and copper" (Snow 1990:93). All are representative of European contact and suggest that there was considerable movement late in the history of the region. From the historic period, Snow reports the presence of both Ocmulgee Fields, Chattahoochee Brushed, Mission Red Filmed, and Leon-Jefferson Complicated Stamped pottery — all presumably associated with Creek sites (Snow 1990:93). Unfortunately, little more than the presence of these various wares is known about the historic or contact period sites in the area.

A Brief History of the City and Project Area

By the second quarter of the eighteenth century South Carolina had risen to such economic, if not political, importance, that it was essential for its plantation and trade network to be buffered from the Spanish holdings in Florida (Coleman 1976:169-170). In addition, establishing such a buffer colony would serve the goal of making productive colonists out of the growing number of English poor urban dwellers — a major philanthropic concept which also worked to ensure at least short-term political stability in the Mother Country. Finally, the colony would establish new territory for mercantile enterprises, essential to England's economy. Consequently, George II granted a 21-year charter to the "Trustees for Establishing the Colony of Georgia," a group of prominent noblemen and political leaders (including several members of the House of Commons who succeeded in raising Parliamentary support and funding for the new colony). James Edward Oglethorpe, a young and ambitious member of Commons selected to lead the colony, was personally responsible for organizing the venture and accompanied the first 120 settlers to Georgia during the winter of 1732-33.

Oglethorpe selected Savannah, known by the Indian name of Yamacraw Bluff, as the location of the settlement. It possessed an array of essential features — close proximity to South Carolina, well drained soil, a good water supply, an excellent harbor, easy interior communication, and easy assess to coastal islands. It was also already well known to Indian traders and was defensible, should the need arise (Spalding 1977:10).

Savannah was apparently laid out using a plan developed by Oglethorpe which emphasized regularity — a universal order common to the Georgian mind-set. Central to this organization was a square, the center of the town ward, around which were four tythings and four trust lots. The four trust lots were initially intended to serve the "public good" and most of the early public buildings were situated on these lots. A tything consisted of 10 town lots of equal size, divided by a narrow lane providing rear lot access. Each male settler would receive:

> a town lot containing 60 feet in front, 90 feet in depth, a garden lot embracing 5 acres, and a farm containing 44 acres and 141 poles, 50 acres in all (Lockwood 1934:II:267).

By 1736 the town had begun to grow, albeit slowly. Francis Moore described the town as:

> built of wood; all of the houses of the

> first forty free holders are of the same size with that Mr. Oglethorpe lives in, but there are great numbers built since, I believe one hundred or one hundred and fifty; many of these are much larger, some two or three stories high . . . . the lots are fenced in with split pales; some few people have palisades of turned wooed before their doors . . . . Those who have cleared their five acre lots have made a very great profit out of them by greens, roots, and corn. Several have improved the cattle they had at first, and have now five or six tame cows (quoted in Gamble 1901:30).

By the 1750s Savannah had grown and DeBraham described its organization:

> she is laid out 2,115 by 1,425 feet square in her Bounds, this again in 24 Tidings [tythings], each of them in 10, in all 240, and 48 Trustee Lots, with six Market Places, each 315 by 270 feet square. Three broad Streets 75 feet wide, running perpendicular from the Bay, and three other 75 feet wide parallel with the Bay, centrically crossing each other, divides the City in six equal Quarters, each Quarter had four Tidings, each Tiding is run through (parallel to the Bay) by a line 22½ feet wide, each half Tiding Consists in five contiguous Lots, each Tiding as well as Trustee Lot is 60 feet in front, and 90 feet in depth. Trustee Lots are divided from each other as well as from the Tiding Lots by Streets 75 & 37½ feet wide (DeVorsey 1971:52).

This arrangement of open areas and wide streets was designed to provide adequate light and air, hopefully making Savannah a healthier location than many on the coast. It also offered the strategic advantages of a compact, defensive settlement, while the squares reduced long attack vistas. In addition, it is clear tat Utopian tendencies are also present in the identical size of the lots, equal access to "public good" lots, park areas, and granting (not selling) of lots. It was also hoped that limiting the size of land holdings would promote a large male population capable of quickly forming a large standing militia. Georgia was to be a state of yeoman farmers, not aristocratic planters. As part of this overall policy, the trustees prohibited slavery, in order to ensure self-sufficiency.

This program of development placed Georgians under a distinct economic disadvantage compared to their South Carolina neighbors just across the Savannah River. Of course it didn't help that the earliest agricultural pursuits — silk culture and wine production — were ill-conceived failures. The economy was generally stagnant and interior settlements failed to thrive. When the colony's charter was surrendered in 1752, the population was only 3,000 people (including 800 slaves).

A portion of the project area, situated on the edge of town, was first granted to Thomas Robinson, who was sent to the Colony in 1750-1751 "to promote the Culture of Silk in the Most effectual manner." In order to encourage his activities, he was given a stipend and a 500 acre grant. Curiously, he selected lands not adaptable to mulberry groves, but rather lands suitable for rice culture laying along Musgrove Creek. This plantation, which he called Rawcliffe included at least 200 acres of rice land and at least 200 acres of upland soil suitable for provision crops (Savannah Unit, Georgia Writers' Project 1943:89-90).

Over the next several years Robinson continued to acquire land as the Colony continued to encourage his efforts. In March 1762, after Georgia reverted to the Crown, 1,000 acres of Rawcliffe and another tract, called Mulberry, were conveyed by the Crown to Robinson with the grant noting the tracts would be known by the name of "the Royal Vale" (Savannah Unit, Georgia Writers' Project 1943:91). These lands abutted what is today Fahm Street to the west, taking in all of what would become the S&O Canal lands from the Savannah River southward to the Augusta Highway. Robinson held his tract for only days, selling it to Lachlan McGillivray for £1,335.

McGillivray, a noted Indian trader, had previously acquired a tract to the south of Vale Royal, known as Springfield. Combining these tracts, McGillivray built up his rice cultivation on Royal Vale, while farming at least portions of Springfield (Savannah Unit, Georgia Writers' Project 1943:92-93).

Under Royal "patronage" the economy of Georgia stabilized, and commercial functions began to expand into new areas. One of the most significant changes was the development of a slave-based plantation society. The city had grown to 400 dwellings by 1766 and was divided into two suburbs — to the west was Yamacraw, named for the Indians, while to the east was the Trustees' Garden, named for the lands set aside for garden lots. Coupled with this growth was Savannah's entrance into the shipping economy. By 1773 there were 25 ocean-going vessels registered to Georgians. In that year 225 vessels exported over 11,000 tons of goods from Savannah (Coleman 1976:220; Gamble 1901:33). As a result of this economic surge, Savannah saw increased architectural refinement and new building (see Honerkamp et al. 1983:24 for a review of building forms, especially on the Tything Lots).

As James Vernon McDonough observed, "Georgia revolted against England out of sympathy for the other colonies rather than because of any grievances of her own (McDonough 1950:17), indicating that politically, economically, and especially socially, Georgians held strong ties to the Mother Country. This economic and demographic interruption culminated with the British occupation of Savannah between 1779 and 1782.

During the loss of Savannah, the project area saw military action as General Robert Howe's troops retreated through the burial ground (now known as Colonial Cemetery or Park) but were fired on by British troops to the east. The American forces turned to the west, attempting to make their way down the Ogeechee Road. A number, however, headed for Musgrove Creek, in an effort to make a safe retreat out of British hands. Hitting the creek at high tide many refused to swim the water and were either killed or captured by the British. Others, in an effort to swim the creek, were drown (Gamble 1901:44; Lawrence 1952:321-322).

A map from this battle reveals that while the City continued growing along the waterfront, there was virtually no development in the project area, which remained rural, isolated, and probably quite wet.

In September and October of 1779 Savannah was again under attack, but this time it was by American and French forces that were attempting to retake the city. After a disastrous assault, the French and Americans withdrew, leaving Savannah in the hands of the British. The battle is rather simply described by Johnson:

> Had the French marched into Savannah when they first landed, there would have been little or no resistance — had they immediately assailed the British intrenchments, when the surrender was refused, they could have been carried with ease and but little loss. But the Count concluded to give them a month for the completion of their fortifications, then attempted to storm them, and was shamefully beaten. The whole was miserably conducted and arranged (Johnson 1851:239).

As a result, Savannah was held until the British chose to evacuate the City on July 10 and 11, 1782. The move, at that time, was largely made because the British troops were needed elsewhere, not because of any success on the part of the American troops to endanger the British forces. Some Savannah Tories easily changed sides, wanting to stay in Georgia, while others left with the British troops, finding their way to East Florida or the West Indies (Coleman 1976:86).

Savannah recovered quickly after the American Revolution and by 1800 the town had grown to 5,146 inhabitants. In spite of rather frequent outbreaks of yellow fever (see the discussions in the **Environment of the City** discussions), the town continued to grow to a population of over 22,000 by the eve of the Civil War. In spite of this prosperity, Savannah continued to be overshadowed by Charleston. Haunton (1968:2) attributes this to the lack of credit and marketing facilities in Savannah — in 1823, for example,

Savannah could boast of only three banks and a single insurance company. Savannah still obtained its water from wells, chiefly sunk in the public squares. There were no public lights and garbage was carted to the commons. During the summer scavengers were hired to haul the trash to the edge of the city. Roads were still primarily dirt and every rain caused considerable erosion not only in the streets, but also along the Savannah bluff (Gamble 1901:64). Activities in the survey corridor, however, were far from quiet.

Needing a quick infusion of cash after the Revolution, Georgia began to immediately sell off confiscated royalist lands, including the large Royal Vale and Springfield tracts of McGillivray, which had been claimed by the Whig government on April 19, 1775. The purchaser was Joseph Clay, a Savannah merchant and pay-master-general for the Southern District of the Continental Army. The name of Royal Vale was changed to Vale Royal, which was applied to both tracts. Clay built his mansion on the east bank of Musgrove Creek, apparently in the vicinity of East Bay Street, just west of Fahm Street:

> with gardens on the east and at the rear, this house, an impressive three-story building on a basement, faced westward, affording a view of the distant rice fields. It was in part to these Vale Royal rice lands that President Washington had reference when he arrived in Savannah in 1791 and wrote in his diary that the city was "surrounded with cultivated Rice Fields which have a rich and luxurious appearance" (Savannah Unit, Georgia Writers' Project 1943:97).

Joseph Clay continued the operation of the plantation until his death in 1804, at which time the lands were devised to his heirs, with Joseph Stiles, William Wallace, and Thomas Cummings appointed administrators. A division of the estate, however, was impossible given the large number of heirs who had claims on the property. Consequently, the tract was placed on the market. Described as:

> the very valuable plantation and tract of Land called Vale Royal . . . containing about 1000 acres of which 460 were tide and inland swamp, the remainder prime Cotton land"

it also included Springfield (described as "farm and garden lots") and several additional tracts (Savannah Unit, Georgia Writers' Project 1943:99-100).

In 1806 Springfield was sold to Ralph Clay and Vale Royal was sold to Benjamin Maurice. Maurice's lands were quit-claimed to Joseph Stiles and apparently Clay's purchase was also conveyed to Stiles — both apparently working to help Stiles avoid the legal rules precluding an administrator from becoming a purchaser at his own sale.

Stiles worked diligently to make his new tracts profitable. Although he planted cotton, it has been suggested that he thought rice cultivation was far more profitable. The 1812 Houstoun map shows the rice fields of Vale Royal, as well as Musgrove Creek. At the end of a causeway to the creek is a rice mill and on the opposite shore are cotton fields. This map, however, fails to show the project area, which was still far outside the city limits of Savannah. The Ogeechee Road was then known as the "Road from Great Ogeechee Bridge."

Just as Stiles began to see a profit, the City of Savannah intervened, announcing in 1817 their intention to prohibit "wet and water culture" within 3 miles of the city. This move, at the cost of about $14 per person in the City (to compensate owners of rice lands) was taken to increase the healthfulness of the city (Meade 1980:82; see also Harden 1981:365-366). Gamble notes that the law, while having an almost immediate impact on the number of deaths and illnesses, was far from widely applauded. Stiles agreed to limit his rice cultivation, shifting efforts to brick making and cotton. He continued to operate his rice mills and apparently did not take any real steps to drain his lands. In fact, there is some indication that he continued to grow rice on dry culture lands. Eventually the Savannah action to limit wet culture found its way into the Courts, which ruled against the city. In 1830

the city petitioned the State Legislate to pass a bill allowing them to stop the cultivation of rice within their limits. Gamble notes that:

> the law was especially desired to reach the Springfield plantation, owned by Mr. Stiles, with whom the City was continually at loggerheads over his dry culture contracts, until finally in 1834 suits against him succeeded in fully establishing the sufficiency of the contracts (Gamble 1901:146).

Stiles apparently made some effort to begin draining his fields and several maps of the period show "Stiles Canal" following the course of the present Springfield Canal. Stiles died in 1838 leaving Vale Royal to one set of his children and Springfield to another. Neither group did much with their inheritance, both because of extensive indebtedness against the property and because of the various limitations on the use of the land. It seems that they found subdivision and land sales were far more profitable than agriculture (Savannah Unit, Georgia Writers' Project 1943:104-105).

In April 1850 an agreement was worked out between the Stiles heirs and the City of Savannah to purchase all 960 acres of Springfield Plantation. Gamble notes that:

> a large canal was ordered dug to drain the low lands and the plantation was divided into lots, appraised and offered for sale except the high land. This the committee recommended should be laid out for a cemetery, and that families having dead in the old cemetery should be given lots free in the new cemetery on the condition that they removed their dead there,[2] the other cemetery lots being sold a nominal cost (Gamble 1901:205).

The large canal that Gamble mentions was, of course Springfield Canal, linking up with the portion already excavated and called Stiles Canal. Through time, parts of this canal were also known as Minis Canal, again for the property owner through which it flowed.

Prior to this, however, portions of the project area were dramatically altered by the construction of the Savannah and Ogeechee (S&O) Canal. The need for the canal was intimately linked with the expansion of Georgia, including the lotteries for land ceded by Native Americans. As the state grew, so too did the reliance on waterways for transport of good and crops. After a number of false starts, the canal was completed in 1830. But the problems were far from over, shoddy construction caused repeated failures of locks and embankments. Creditors demanded returns on their investments, and the Savannah community began referring to it as "the Folly." The final crushing blow was railroad fever, which siphoned off investors. In 1836 the canal was bankrupt and was sold at a sheriff's sale.

The new management replaced wooded locks with brick ones, deepened the channel, and reworked the embankments to widen the tow path. By the early 1840s the canal was beginning to be a recognized economic asset. The canal remained operational for most of the Civil War. As Sherman made his advances on Savannah, the S&O was not only the scene of several skirmishes, but was also extensively damaged (Hendricks and Spoolstra 1997:n.p.). Nevertheless, but 1866 the canal was once again in operation and by 1876 it was noted that the canal was "paying property and very useful to the city of Savannah" (Janes 1876:178). In 1888 the canal was purchased by the Central of Georgia Railway which suspended canal traffic and used the canal basin at the Savannah end for its Ocean Steamship Company. Portions of the river lock were removed, the canal was deepened, and the basin was extended to create a boat dock (although most of these activities were outside the project area).

By the twentieth century the canal was largely abandoned, with many areas being filled in for housing

[2] There was growing concern that the "old cemetery" at the corner of Abercorn and Oglethorpe was not only unhealthy and full, but was also in poor condition (see Trinkley and Hacker 1999a, 1999b).

or road projects. In 1933 WPA cres drained portions of the canal, constructed a previously documented floodgate (see Trinkley 1996) and connected the S&O to the Springfield Canal as part of a drainage and flood control project that is still in operation (and which has created the need for this current study) (Hendricks and Spoolstra 1997:n.p.).

Returning to the remainder of Stiles' Springfield Plantation purchased by the City in 1850, a contest was devised in early 1851 to solicit cemetery plans. The winning entry was by J.O. Morse, a Northern engineer in the city working on the new water plant at the edge of Musgrove Creek. Mores was also paid to survey the cemetery (which was laid out to be about 102 acres) and William George, a landscape gardener, was hired to lay out the plan. By June 1851 the cemetery was named Laurel Grove and in August a building was approved for the keeper (Gamble 1901:206).

Originally 4 acres, later increased to 15 (and eventually increased to 35 acres), were set aside for the city's black population and this portion of the cemetery came to be known as Laurel Grove South. At least some of this extension may have been made in 1877, although an additional extension was ordered again in 1881 (Gamble 1901:213).[3] Bodies from the City's potters field, the "negro cemetery," and at least some from the old cemetery (at Abercorn and Oglethorpe) were moved to Laurel Grove (Gamble 1901:207).

The interruption of the Civil War and the city's occupation by Union troops did not dramatically change the project area, although it certainly worked to halt economic development. Perhaps an even greater force than Sherman was yellow fever and the epidemic of 1876 finally forced Savannah to take dramatic steps to drain the areas surrounding the city (see Usinger 1944). However, the 1871 *Bird's Eye View of the City of Savannah* reveals that the project area had not changed much since the 1850s. Development was creeping toward the canal, but largely avoided the immediate area.

At that time the only portion of the Springfield Canal that had been constructed was that portion from about the present location of I-16 northward to Musgrove Creek. Constructed by Joseph Stiles at the urging of the City to drain his wet culture lands this section remained unaltered for nearly 50 years until these new efforts to drain Musgrove Creek and Springfield Plantation. Earlier attempts to deal with the problems by constructing brick and wood sewers (see DePratter and Doyon 1984:22-24) were generally unsuccessful, although considerable effort was spent digging canals and erecting floodgates.

Review of the various municipal reports reveals that the City yearly fought to gain control over its wet, poorly drained areas. In 1887 there were complaints that the weeds in the canals "grow very rapidly," and almost yearly there were accounts of the efforts to clean the various Springfield Canal ditches.

Throughout these reports there are also brief mentions of Ogeechee Road, which was paved with shell up to 1909, when the shell was replaced with gravel (Tiedeman 1909:181).

By 1891 a report was issued on the problem (Blandford 1891) and recommendations were made to extend Stiles Canal and empty it into the S&O Canal. In fact at least some portions of this plan were already in place by 1888 (Figure 4), since this view reveals the canal was already excavated to Laurel Grove Cemetery. While not discussed by DePratter and Doyon (who contend that the Springfield Canal stopped at the Backwater Dam until after Blandford's 1891 report), it seems possible that individual property owners were constructing segments of the canal independently of government overview. This might explain why the Springfield Canal, in the vicinity of Laurel Grove, was known as the Minis Canal, after the landowner of the period just south and west of Laurel Grove.

Regardless, by the early twentieth century the efforts to tame yellow fever through drainage had just about been won. *Sholes Map of the City of Savannah* from 1900 reveals that the canal was completed, was still going under the S&O Canal, and was still emptying into the Savannah through its own system.

[3] Eventually Laurel Grove, according to Gamble (1901:386) accounted for 117.9 acres.

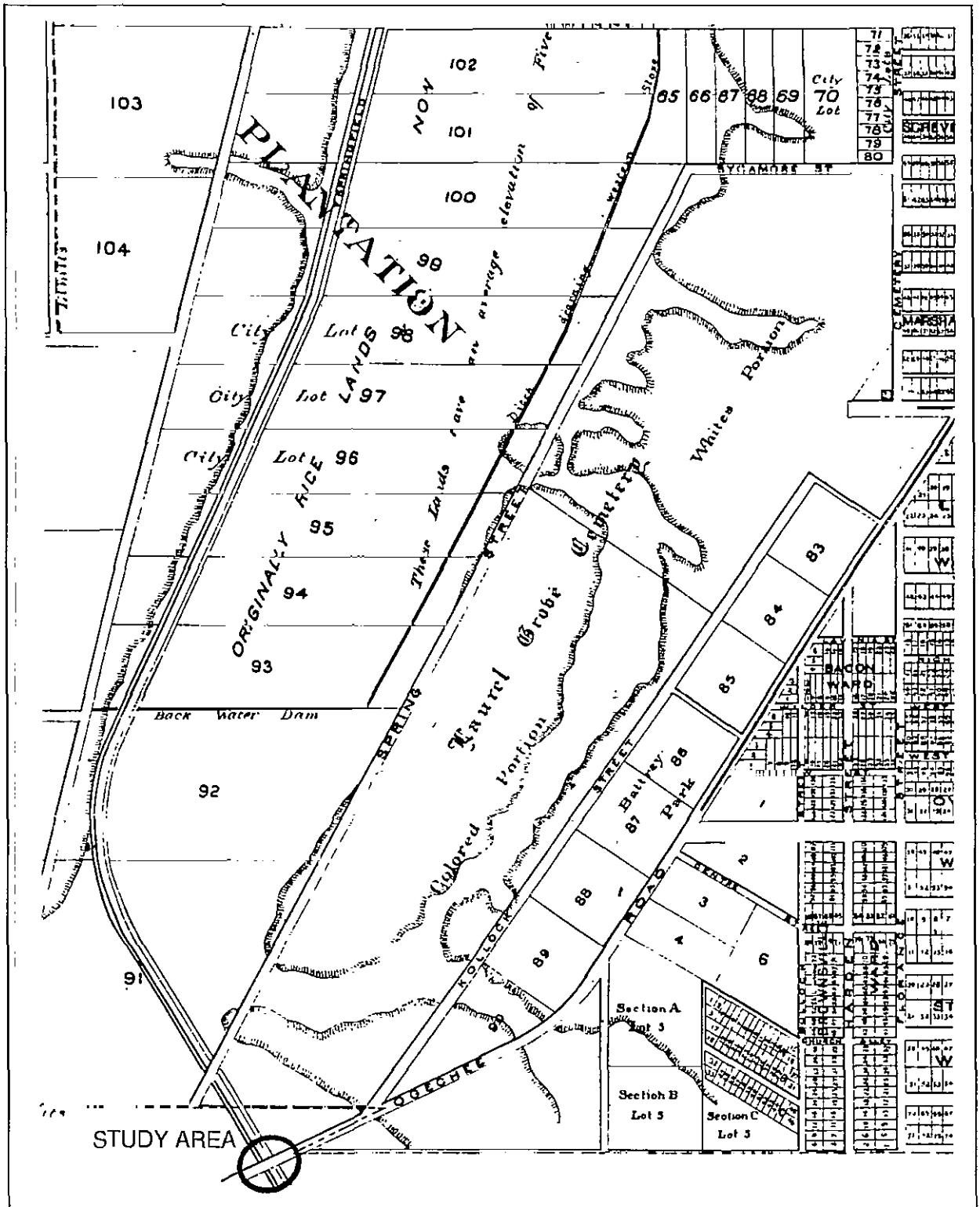

Figure 4. Portion of the 1888 *Map of the City of Savannah and Vicinity* showing the project area.

Coupled with these efforts, the City was also working to drain Laurel Grove (Gamble 1901:385), much of which was so wet that water frequently stood on graves and the caretaker complained that graves could often not be dug deeper than two feet. A major drainage through the cemetery was canalized, with several feeder canals excavated. Coupled with the completion of the Springfield Canal this seems to have dramatically improved the cemetery's drainage. In spite of the improved drainage, the cemetery was not expanded and instead purchased Bonaventure Cemetery (begun as a private cemetery in 1850) in 1907 (Toledano 1997:165-166).

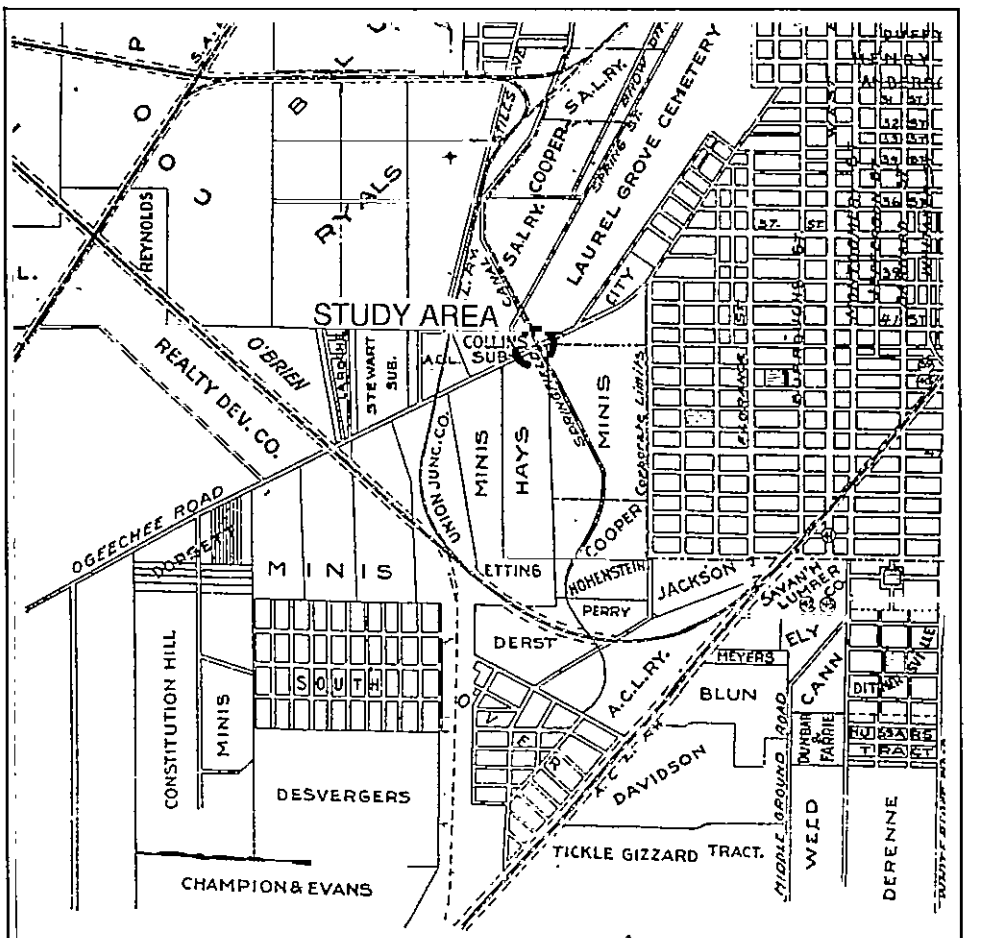

Figure 5. Portion of the 1910 *Map of the City of Savannah and Vicinity* showing the project area.

The 1910 *Map of the City of Savannah* reveals that the Springfield Canal was complete and that development was beginning to overtake the newly drained Springfield lands (Figure 5). DePratter and Doyon note that the exact date that the Springfield Canal is connected to the S&O Canal isn't known, but suggest that it had occurred by at least 1945 (DePratter and Doyon 1984:26). As previously mentioned, it seems reasonable that this was undertaken as a WPA project, associated with the filling of Gays Lock Number 2 on the S&O alignment.

Development during the twentieth century was dramatic compared to that of the last half of the nineteenth century. It was, however, largely confined to industrial tracts and small, low-income housing projects around the Springfield Canal (Trinkley 1997). In the current project area there is very little accessible information since the Sanborn Insurance Maps fail to note any structures. Even as late as 1954, while several small dwellings are shown along Ogeechee Road, the bridge over the Springfield Canal is not shown.

In 1913 the municipal report explained that Savannah was responsible for five main bridges, including the Bay Street Bridge (over the S&O Canal), the River Street Bridge, the Bay Street Bridge over Musgrove Creek, the Louisville Road over the S&O Canal, and the Railroad Street Bridge, also over the S&O Canal. In addition, the report noted that the City "owns and maintains seven other wooden bridges from 22 to 50 feet" in length (Davant 1913:222-223). One

of these must have been the bridge over the Springfield Canal at Ogeechee Road. By 1914 the City was complaining that "wooden bridges or even wooden-floored bridges are costly to maintain, and the remaining small wooden bridges as fast as they may have to be replaced should be reconstructed of more permanent material (Davant 1914:263).

From 1915 on through the last available municipal report in 1923 there is no mention of the Ogeechee Road bridge across the Springfield Canal. Nor does there seem to be any information concerning the bridge in any of the various city files we consulted. Nevertheless, by 1961 the bridge is shown as a culvert — presumably describing the existing structure (Figure 6).

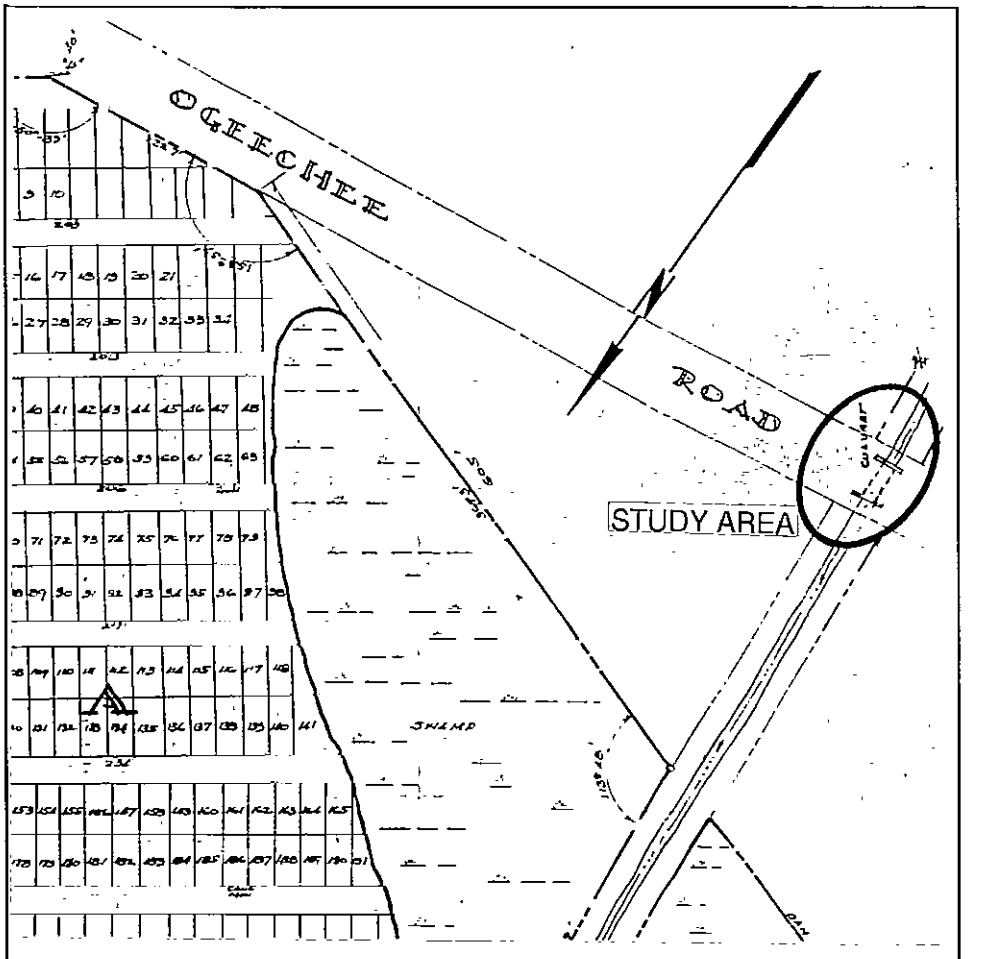

Figure 6. Portion of the 1961 *Atlas of Laurel Grove Cemetery, Savannah, Georgia, Colored Section*, showing the culvert for the Minis Canal at Ogeechee Road.

This suggests that the brick arched culvert over the Springfield Canal at Ogeechee Street was constructed sometime between 1914 and 1961. Although uncertain, we suspect that it, like many of the other drainage improvements, may have been a WPA project and there is no remaining documentation.

RESEARCH METHODS

Introduction

As previously indicated, the primary goals of this survey are to identify, record, and assess the significance of archaeological and architectural sites within the proposed area of potential effect (APE), which for this project was as an area about 50 feet on each side of the bridge replacement.

Site Evaluation

Archaeological sites will be evaluated for further work based on the eligibility criteria for the National Register of Historic Places. Chicora Foundation only provides an opinion of National Register eligibility and the final determination is made by the lead permitting agency in consultation with the State Historic Preservation Officer at the Historic Preservation Division of the Georgia Department of Natural Resources.

The criteria for eligibility to the National Register of Historic Places is described by 36CFR60.4, which states:

> the quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and
>
> a. that are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> b. that are associated with the lives of persons significant in our past; or
>
> c. that embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> d. that have yielded, or may be likely to yield, information important in prehistory or history.

National Register Bulletin 36 (Townsend et al. 1993) provides an evaluative process that contains five steps for forming a clearly defined explicit rationale for either an archaeological site's eligibility or lack of eligibility. Briefly, these steps are:

- identification of the site's data sets or categories of archaeological information such as ceramics, lithics, subsistence remains, architectural remains, or sub-surface features;
- identification of the historic context applicable to the site, providing a framework for the evaluative process;
- identification of the important research questions the site might be able to address, given the data sets and the context;
- evaluation of the site's archaeological integrity to ensure that the data sets were sufficiently well preserved to address the research questions; and

Table 1.
Georgia's Criteria for Historical Significance of Bridges,
prepared by the Historic Preservation Section, Georgia Department of Natural Resources
October 21, 1980

In General:
Criteria for determining the eligibility of historic bridges should be based on the standard National Register Criteria for Evaluation.

More Specifically:
Criteria for evaluating historic bridges should include consideration of:

1. *Integrity* of:
   a. location (in original location or moved according to historical practices);
   b. setting (compatibility of condition of current setting with original setting);
   c. design (form, type, general arrangement);
   d. materials (original construction materials, except for elements routinely repaired or replaced);
   e. workmanship (signs of construction techniques, fabrication methods, craftsmanship).

2. *Representativeness*, the ability to characterize or typify, in terms of location, setting, design, materials, and/or workmanship.

3. *Singularity*, the quality of being unusual, distinctive, distinguished, or unique, in terms of location, setting, design, materials, and/or workmanship.

4. *Condition*, only insofar as it affects formal or material integrity (note: "functional" integrity — the ability of a bridge to continue serving in that capacity — is not a National Register criteria for evaluating bridges).

5. *Chronology*, the quality of being "sufficiently old" for evaluation; in general bridges built through the mid-1930's [today this would be mid-1940s] are "sufficiently old" but this cut-off date may vary according to bridge type and location; newer bridges will have to justify an exception to this rule.

6. *Historical Association*, in terms of:
   a. periods, events, activities, or people in local, regional, state, or national history;
   b. bridge builders, engineers, companies.

7. *Place Association*, as part of a recognized historical "place," in terms of:
   a. traditional crossings; if it maintains the environment of an earlier crossing, it may be historically significant;
   b. associated development (mills, stores, houses, etc.).

8. *Information*, the ability to yield valuable and/or otherwise unavailable data about historic bridge design, construction, materials, etc.

- identification of important research questions among all of those which might be asked and answered at the site.

This approach, of course, has been developed for use documenting eligibility of sites being actually nominated to the National Register of Historic Places where the evaluative process must stand alone, with relatively little reference to other documentation and where typically only one site is being considered. As a result, some aspects of the evaluative process have been summarized, but we have tried to focus on each archaeological site's ability to address significant research topics within the context of its available data sets.

Every effort is made to provide an assessment of either eligible or not eligible. There are occasions, however, when the initial survey does not provide sufficient information to allow such a determination. In those cases we recommend the site potentially eligible. Effectively this means that additional investigations are necessary if it is critical to determine the eligibility. In some cases it may be more cost-effective to treat the site as eligible and greenspace it — that is, set the site aside in perpetuity, ensuring that it is not affected by construction or subsequent maintenance activities. While greenspacing may be an effective management tool, it should be realized that such an undertaking carries considerable responsibilities — and liabilities should greenspacing not be maintained.

In assessing the eligibility of the Ogeechee Road bridge across the Springfield Canal a somewhat different approach has been used. The National Research Council, Transportation Research Board has carefully documented attempts to develop decision making criteria for historic bridges (Chamberlan 1983). Although nearly two decades old, the document is carefully written and impartially presents the history of preservation in bridges on federal highways. The work by the Georgia Department of Transportation, in conjunction with the Georgia Department of Natural Resources, represents one of the earliest efforts to develop a technique for evaluating the eligibility of historic bridges. The approach used (see Table 1) is described by Chamberlan as based on "modified National Register methods."

Our assessment of the Ogeechee Road bridge follows the system outlined by Georgia. Although more intuitive than numerical ranking systems, the Georgia approach also does not include criteria which are clearly not appropriate for eligibility considerations, such as "preservation potential," "aesthetics," and "accessibility." While these, and other, considerations may be valid in terms of how significant bridges are managed, they do not seem appropriate for consideration in the eligibility process.

Field Methods

This project included both archaeological and architectural components. The archaeological study included the excavation of shovel tests at 25-foot intervals in those areas adjacent to Ogeechee Road where it was possible to do so. Excluded were areas of concrete or asphalt, as well as yard areas in currently occupied structures.

All shovel tests were approximately one-foot square and were excavated to subsoil, usually about 0.8 to 1.5 feet below the surface. All soils were screened through ¼-inch mesh and soil profiles were recorded as appropriate, using Munsell soil colors. All shovel tests were backfilled at the completion of the work.

The architectural survey consisted of a brief evaluation of standing structures, with the goal of determining whether they were at least 50 years old. If they were, we anticipated documentation of the structure sufficient to allow a determination of eligibility. Otherwise we anticipated documenting that the structure was not at least 50 years old. In the case of the bridge structure we felt that the documentary research strongly suggests an age in excess of 50 years, so the issue here involved documentation adequate to allow a determination of eligibility by the lead federal agency. To that end we took photographs and make a scale drawing the existing bridge.

Laboratory Methods

During the field investigations the artifacts recovered were consistently "modern" in appearance.

For example, all nails were wire nails, the bottle glass included specimens with colorful printed labels, bits of plastic were recovered, and we failed to identify any materials which could be considered pre-1950. Although we did complete a Georgia State Site Form for the remains identified during the survey, it did not seem necessary, or even appropriate, to curate the remains. As a result, the specimens were examined in the field, tabulated, and not collected.

As a result, the laboratory processing of the collection was limited to the production of an inventory.

FINDINGS

The Archaeological Survey

On the northeast corner we found a standing structure which was still occupied. No shovel testing was conducted in this quadrant. On the southeast corner we found an occupied house and yard, with a board fence about 20 feet from the edge of the canal. No shovel testing was conducted in this area.

To the southwest of the proposed bridge replacement we found an open grassed lot which is being used as a convenient cut-through from Victory Drive to Ogeechee Road. A series of three shovel tests were excavated in this area, about 25 feet from the road edge and each on an east-west line about 25 feet apart. These shovel tests revealed an array of modern debris, including chicken bones, fragments of metal cans, identifiable soft drink and beer bottles, plastic utensil handles, and similar materials. None of the artifacts, however, were over 50 years in age and none appear to be associated with any structure or domestic activity. They all appeared to represent roadside trash. This scatter of debris was not assigned an archaeological site number.

In contrast, the northwest quadrant revealed the concrete slab foundation of a structure which had been demolished within the recent past. In this area a series of three shovel tests were excavated, about 20 feet from the road edge and each on an east-west line about 25 feet apart. All three shovel tests revealed materials.

Shovel Test 1, situated closest to the canal, contained one fragment of three fragments of clear bottle glass, one fragment of molded milk glass, nine wire cut nail fragments, six fragments of window glass, and one fragment of melted glass.

Shovel Test 2, situated 25 feet to the west of Shovel Test 1, yielded one fragment of clear bottle glass, one fragment of brown bottle glass, one fragment of a ceramic tile, one wire cut nail fragment, one widow glass fragment, and one porcelain electrical insulator. Also present in this shovel test was a quantity of coal, brick rubble, and hard portland cement mortar.

The final shovel test, 25 feet west of Shovel Test 2, contained no artifacts, but did produce what appeared to be an intact brick foundation wall about 0.3 foot below the modern ground surface.

The shovel tests exhibit a profile of very dark grayish brown (10YR3/2) sandy loam about 0.9 to 1.2 feet in depth overlying a yellowish brown (10YR5/8) or very pale brown (10YR7/4) fine sand subsoil. Shovel Tests 2 and 3 exhibit considerable disturbance with mixed soil profiles and evidence of disturbance to depths of at least 1.2 feet. This disturbance is likely the result of razing the structures and/or removing the demolition debris.

These materials were assigned site number 9CH907. The central UTM coordinates are 488600E and 3546645N and the site has an elevation of about 9 feet above mean sea level (Figure 7). Its dimensions are not well documented, since we investigated only a small area. However, we know that site extends westward from the canal edge at least 80 feet and extends northward from Ogeechee Road at least 25 to 50 feet. It is likely that these remains represent the demolition of a structure present on the site and shown on the 1954 Sanborn Insurance maps and demolished by the City within the past several years in anticipation of the drainage improvement project.

Site 9CH907 possesses a number of data sets, including seemingly intact features, architectural remains, and at least a few kitchen-related materials. These materials, however, all appear to represent items deposited within the last 75 to 50 years. Moreover, those specimens which may be classified as modern (i.e., less than 50 years old) dominate the collection, overwhelming the few obviously older items (such as the porcelain insulator).

In addition, the context of these remains has been significantly affected by the demolition. At this point it appears that the demolition of the structure resulted in considerable mixing of deposits, as well as damage to below grade features.

We do not believe that these remains are able to address significant research questions. The topics they might address, such as refuse disposal practices and the status of the occupants, can be addressed through historic and documentary research. This is especially true given the disturbed nature of the site.

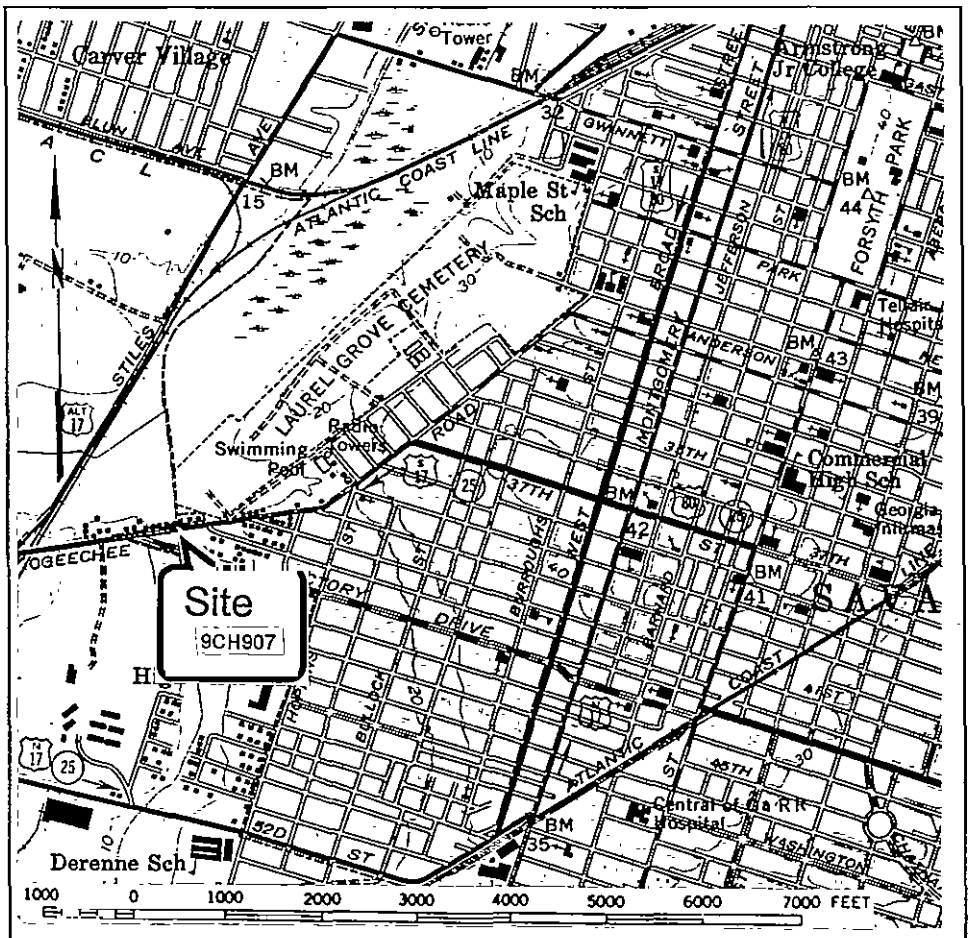

Figure 7. Location of identified site on the Savannah USGS topographic map.

As a result, we recommend this site not eligible for inclusion on the National Register and, pending the opinion of the lead federal agency and the concurrence of the State Historic Preservation Officer, no additional management activities are recommended.

Architectural Assessments

There is one standing structure (side the bridge itself) within the proposed APE. It is a ca. 1950 single story frame house with synthetic siding set on a CMU foundation (Figure 8). This structure, because of its age, is not recommended eligible for inclusion on the National Register of Historic Places and, pending the opinion of the lead federal agency and the concurrence of the State Historic Preservation Officer, no additional management activities are recommended.

Our assessment also included the bridge itself. This structure might more accurately be described as a brick arched culvert. It measures 20 feet 10 inches in length and 30 feet 6 inches in width (center of curb to center of curb). It consists of a brick arched opening measuring 10 feet 4 inches in width slightly off-centered in the north wall. The arch width and placement cannot be discerned on the south wall since that portion of the structure has failed and is currently be shored up by metal coffer dam panels. These restrict access to that portion of the structure.

The brick arch has been constructed using a hard fired reddish-brown bricks measuring 8⅜ (varying from 8¼ to 8¾) by 4 by 2¼ inches. Three courses of bricks form the arch, creating a wall about 13 inches in thickness. In the interior of the culvert the brick are laid

Figure 8. Standing house and general bridge area, view to the northeast.

in American bond (4/1), while the arch itself is laid up in American running bond.

The north and south side walls of the culvert are laid using a hard fired reddish-orange brick measuring 8¼ by 4 by 2¾ inches. The walls exhibit an American bond with three stretches over a course of headers. These walls are also 13-inches, or 3 bricks, in width.

All of the mortar joints exhibit a smooth joint and a hard portland cement mortar with abundant flakes of shell, likely oyster. These joint appear to be in sound condition in all areas except in the tidal range, where there is considerable erosion and loss of mortar.

The curbs were constructed of four courses of gradually inset brick, which were then covered with the same mortar to create a capping. In many areas this is damaged and has fallen off, exposing the underlying brick.

Examination of the deck reveals 1½ inches of asphalt over a 7-inch thick concrete slab. There is center expansion joint running north-south. Below the concrete is about a foot of clay fill, which served as the bed for the road surface. On the edges, beyond the

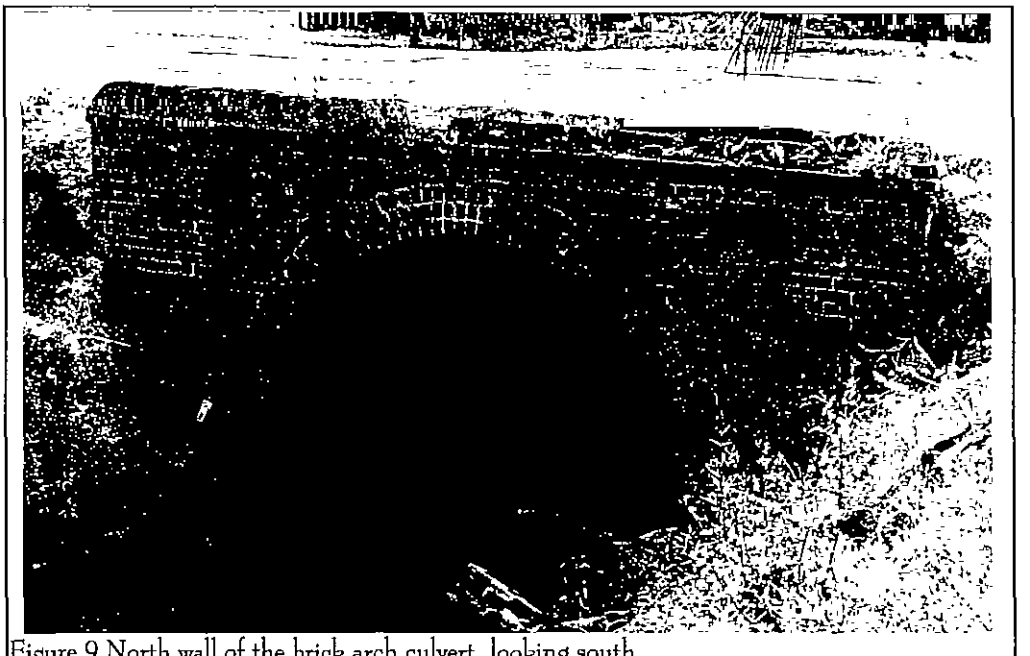

Figure 9.North wall of the brick arch culvert, looking south.

Figure 10. South wall of the brick arch culvert, looking north. Note the effort to shore the collapsing wall.

concrete roadway, the brick arch was infilled with a brown loam.

In all respects the structure appears to date from the twentieth century. The hard mortar, the hard fired brick, the use of clay as the fill, and the construction technique are all typical of ca. 1920 through 1950 construction techniques. This correlates well with the historical research, which suggests a construction date post-1914 and pre-1961.

In terms of evaluating the significance of this structure we again return to Table 1. First, and most fundamentally, it is likely that the structure exhibits the time depth to be considered for eligibility.

The integrity of the Ogeechee Road bridge is mixed. While it is at its original location (a culvert being difficult to move under the best of circumstances), the setting has changed dramatically over the past 30 years. Likewise, while the original workmanship was excellent, the bridge has been poorly maintained and today the south side wall has completely separated from the arch and is

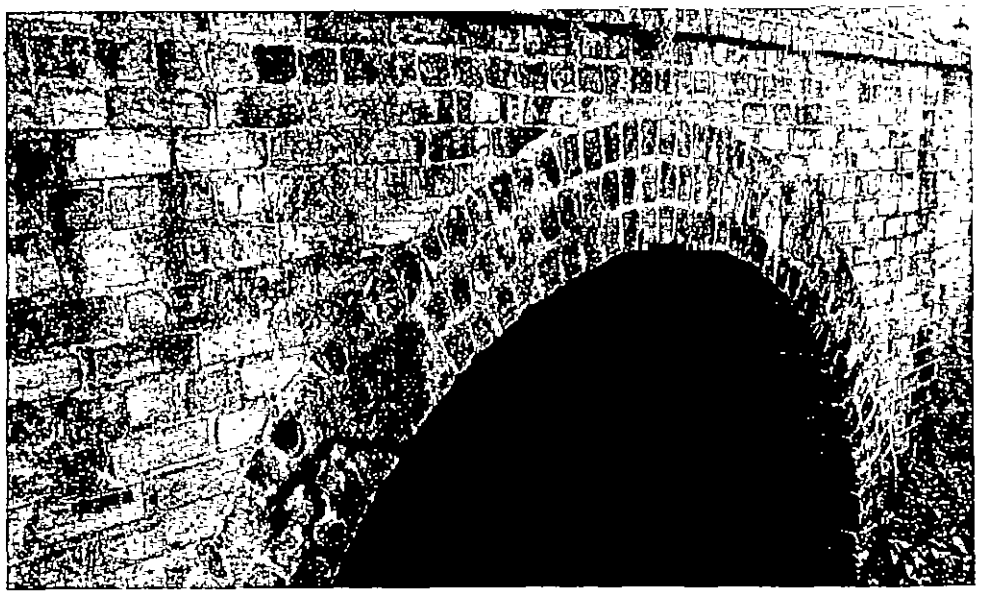

Figure 11. Interior of the arched culvert, showing brick construction and bonding pattern.

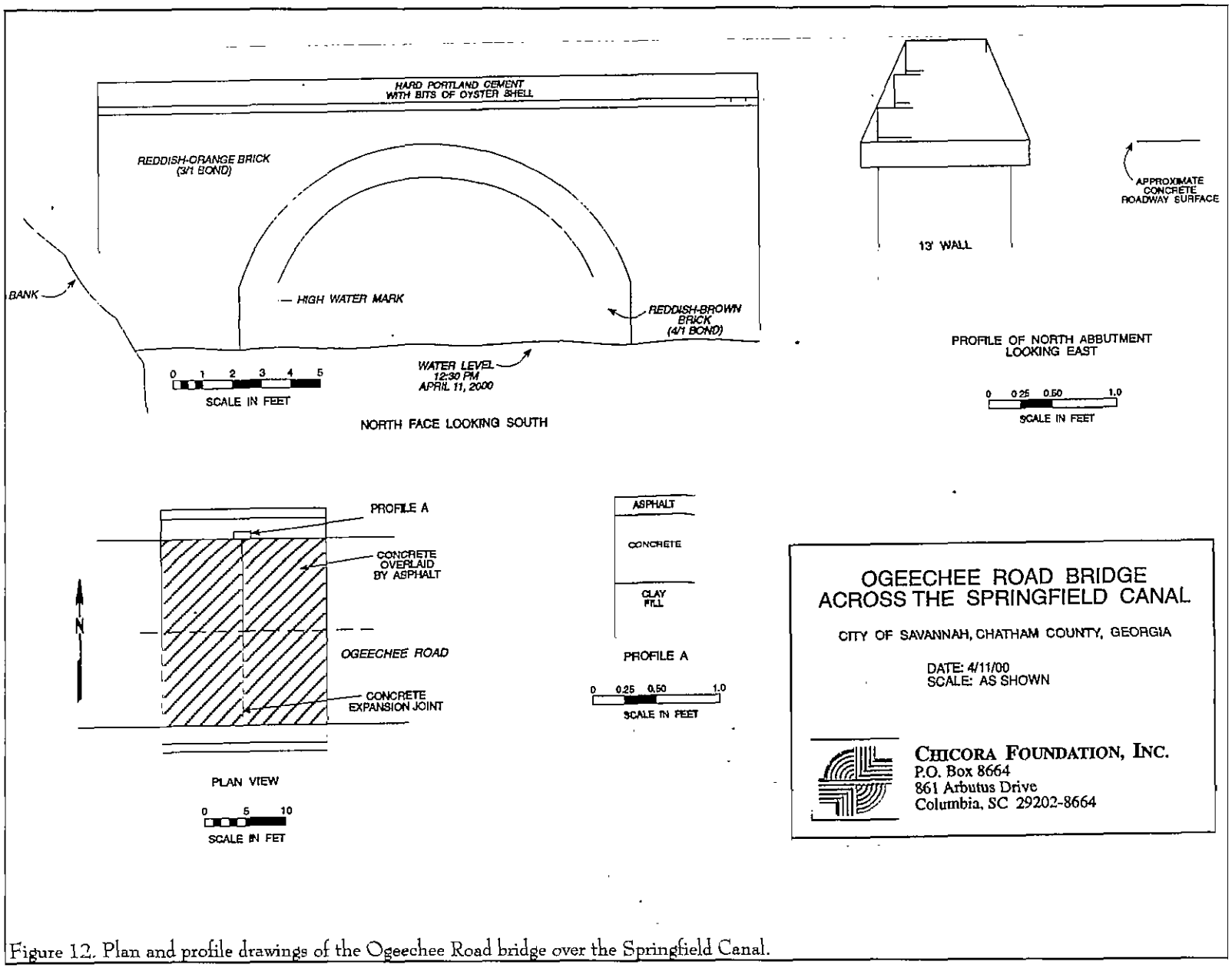

Figure 12. Plan and profile drawings of the Ogeechee Road bridge over the Springfield Canal.

leaning precariously to south. The "fix" has been to drive metal panels in the canal adjacent to the bridge, in an effort to shore up the failing side. This repair dramatically affects the integrity of the structure.

It is difficult to characterize the "representativeness" of this structure since there is no list of brick culverts maintained by either the City, Chatham County, or the Georgia Department of Transportation (which does not inspect structures less than 20 feet in length and, for some reason, has not inspected this structure). Likewise, we cannot comment on the "singularity" of the structure, since there is no inventory.

In terms of condition there is no question that the bridge is in very poor condition. In spire of the damage to the side wall, the City has not posted a weight limit on the structure, so it is likely that the damage continues to worsen, even with the attempt to shore up the south wall.

We have been unable to identify any significant historical association for the structure. There is no indication that it was conceived of as anything other than a more permanent solution to the road crossing than a wood bridge. Likewise, while the structure may represent a WPA activity, we have been unable to identify any documentation for the structure in any city, county, or state file. It is unlikely that the structure was designed by any significant engineer or was constructed by any historically significant bridge company. It was likely a local project, using local materials and constructed to local specifications.

In the context of "place association," the bridge appears to have little significance. Although the Ogeechee Road is a historic road, and while the Springfield or Minis Canal is likewise historic, this is not a significant crossing or one which is intimately associated with the canal or its operation. Nor does it appear to be associated with any specific development, such as stores or mills on the edge of the canal in this location.

Finally, we do not believe that the culvert contains any significant information concerning bridge design, construction, or use of materials. What information this particular structure can contribute, we believe, has been recorded during this study.

As a result, we recommend the brick arch culvert at the Ogeechee Road crossing of the Springfield canal as not eligible for inclusion on the National Register of Historic Places. Pending the opinion of the lead federal agency and the concurrence of the State Historic Preservation Officer, no additional management activities are recommended for this culvert.

SUMMARY AND RECOMMENDATIONS

This study involved the examination of an area (defined as the area of potential effect, or APE) measuring about 120 feet east-west by 130 feet north-south surrounding the proposed Ogeechee Road bridge replacement over the Springfield canal on the southwest side of Savannah in Chatham County, Georgia. The City of Savannah proposes to remove the existing bridge and replace it with a structure about the same width, but about 40 feet in length. In addition there would be some recutting of the canal banks, placement of rip-rap, and other construction activities. This report, conducted for Thomas and Hutton Engineers, provides the results of the investigation and is intended to assist that organization comply with their historic preservation responsibilities, likely stemming from an Army Corps of Engineers permit.

The investigation found considerable modern disturbance in the northeast and southeast quadrants of the APE. In the southwestern quadrant a variety of materials were encountered in shovel testing, but all were modern and no archaeological site was defined. In the northwest quadrant of the APE a series of three shovel tests identified primarily twentieth century debris, assigned the archaeological site number 9CH907. This site has been recommended not eligible for inclusion on the National Register since it does not appear able to address significant research questions.

The architectural study identified one standing structure which will be razed in the course of the project. This structure, a single story house with synthetic siding and set on a CMU foundation, does not appear to meet the age requirement for the National Register and is therefore recommended not eligible. No further management activity is recommended for this location.

The bridge proposed for replacement might better be defined as a brick arched culvert. Based on both documentary research and an assessment of the materials and techniques used in construction, this structure was likely built after 1919 and prior to 1961. We tentatively suggest a date of between 1920 and 1940 for its construction. Since that time the bridge has fallen into disrepair. Because of the traffic weight on the bridge, perhaps coupled with the nature of the subsoils, the south side wall has failed, separating from the arch and leaning outward. In an effort to stabilize this bridge, the City has erected metal coffer dam panels.

The bridge was recorded using color photograph and scaled plan and profile drawings. When the Criteria for Historical Significance developed by the Historic Preservation Section of the Georgia Department of Natural Resources is applied to this bridge (or culvert), we recommend it not eligible for inclusion on the National Register of Historic Places.

It is possible that additional archaeological remains may be encountered in the substation during construction activities. As always, the utility's contractors should be advised to report any discoveries of concentrations of artifacts (such as bottles, ceramics, or projectile points) or brick rubble to the project engineer, who should in turn report the material to the State Historic Preservation Office, or Chicora Foundation (the process of dealing with late discoveries is discussed in 36CFR800.13(b)(3)). No further land altering activities should take place in the vicinity of these discoveries until they have been examined by an archaeologist and, if necessary, have been processed according to 36CFR800.13(b)(3).

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